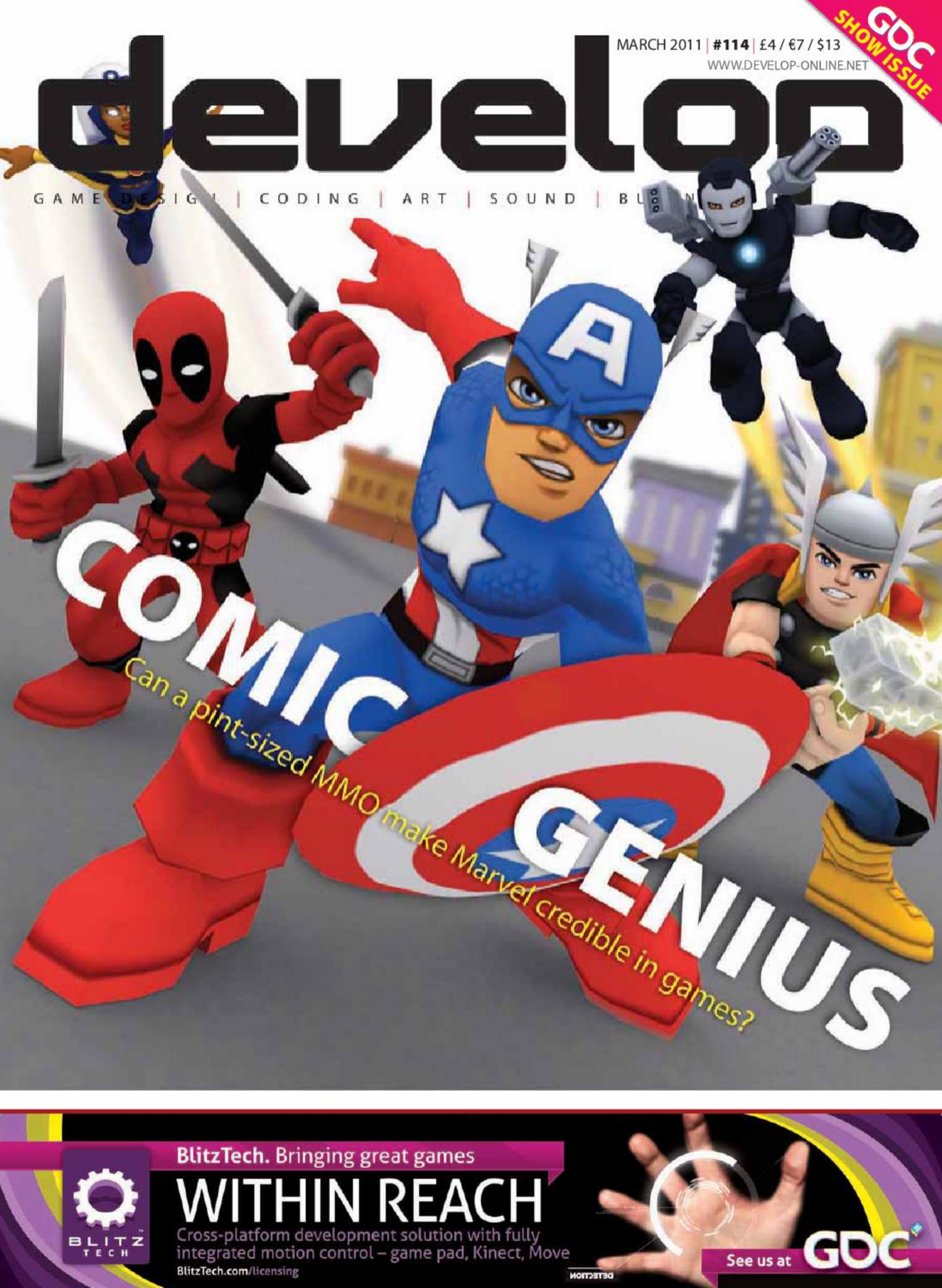




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London special effects giant moves into games

Soho-based Oscar-winning The Mill opens new games team | Former SCEE man Arran Green on board to run division



by Michael French

EVERYONE is talking about the migration to low-end mobile and social games – but there's still growth in the triple-A business. Just ask The Mill.

The highly-regarded special effects company, which is currently best known for its work on TV shows like *Doctor Who* and *Primeval*, has opened a new division to make high-end games content.

The Mill has been working with games developers for just over a year – having worked on trailers for *Bodycount*, by Codemasters (pictured), *Killzone 3* by Guerilla/SCEE and *FIFA 10* ad for Electronic Arts.

The aim is to draw on The Mill's extensive experiences across a diverse array of projects that also include TV show *Merlin*, the movies *Voyage of the Dawn Treader*, *Black Hawk Down*, and *28 Weeks Later*.

Green told *Develop*: "I've been a long term fan of The Mill during my years at Sony, collaborating on some fantastic projects. So I was incredibly excited when I joined them to help with the launch and expansion of their new Gaming Division."

"On a personal level, it's tremendously exciting to be surrounded by such a talented

"The Mill is a true tour de force in the world of VFX and I can't wait to bring that skill and creativity to the greater games industry."

Arran Green, The Mill

But only now has it formally established a dedicated gaming division.

It hired former SCEE video boss Arran Green (pictured above left) to head up the new team, which create games trailers, in-game content, cinematics and TV spots for games developers, publishers and marketing teams.

group of people. The Mill is a true tour de force in the world of VFX and I can't wait to bring that skill and creativity to the greater games industry.

"So far we have a great team in place and have been lucky to work on some amazing projects for the likes of Codemasters, EA and Sony." www.themill.com



Editorial

Are negative UK devs digging an early grave?

CANVASS the UK industry and around half will say games development here is doomed.

They've got a point. Activision is cutting British teams; our education system is screwed; stalwart and newcomer alike (see: Froniter, Gusto, or Ignition) has had to cut corporate flab.

Some pundits are seriously suggesting a migration of UK talent would kill everything we cherish and champion about British games development – even, preposterously, Rockstar.

Speak to the other half, though, and by all accounts we're thriving. And they're right.

The Livingstone-Hope review showed a remarkable ability by the UK to self-moderate and find ways to improve; a wave of new developer-run publishers are on the scene, from Scotland's Outplay to the NESTA-backed London Consortium; and both newer, non-traditional firms and typical teams are making good work out of platforms new and old.

So, we're just in the midst of a transition, then?

Well... no. We're always in the midst of a transition, that's how the games industry works – there's always a cycle, whether that's the twilight years of a console or to the layering complexities of a digital distribution system.

The fact is, this time, as developers have become more and more vocal and increasingly prominent, UK studios are wasting the opportunity. They're talking Britain down into a crumbling institution, when it should be painted as an evolving powerhouse.

By all means talk about our shortcomings – and campaign for what we need and deserve – but should we let that cloud over all the success stories? Because that's what happening. After all, begging for a tax break just looked like begging.

Otherwise, all the negative talk about the United Kingdom will only create a self-fulfilling prophecy, not destroy one.



Michael French

michael.french@intentmedia.co.uk

Michael.

Conference chaos?

Sessions and meetings competing for your attention at GDC? We've

	Monday, February 28th	Tuesday, March 1st
09:00		
10:00	10:00am - 11:00am Mobile Augmented Reality - What's Possible GDC Smartphone Summit Room 120, North Hall	10:00am - 11:00pm Gamification 201 - 60 Tactics in 60 Minutes Serious Games Summit Room 308, South Hal
11:00	11:15am - 12:15pm AI Pr0n: Maximum Exposure of Your Debug Info EA, Blizzard, others AI Summit Room 3002, West Hall	11:15am - 12:15pm Infity Blade: How We Made a Hit, What We Learned, and Why You Can Do it Too! Donald Mustard, Chair Entertainment GDC Smartphone Summit Room 305, South Hal
12:00		
13:00	LUNCH	LUNCH
14:00		1:45pm - 2:45pm IP and Brands: 4 Postmortems Bigpoint, Playfish, Playdom, IWin Social & Online Games Summit Room 134, North Hall
15:00	3:00pm - 4:00pm Social Mechanics for Social Games Raph Koster, Playdom Social & Online Games Summit Room 134, North Hall	
16:00		
17:00	4:15pm - 5:15pm Games on Smart TVs: Lessons Learned from the Development of Google TV Ian Ni-Lewis and Andres Ferrate, Google Social & Online Games Summit Room 134, North Hall	4:15pm - 5:15pm The Great Gamification Debate Bogost, Robertson, Schell, others Serious Games Summit Room 310, South Hall
18:00		

We've got you covered

made a minute-by-minute guide to the 21 sessions you mustn't miss – and left time for your meetings

	Wednesday, March 2nd	Thursday, March 3rd	Friday, March 4th
09:00	9:00am - 10:00am Video Games Turn 25: A Historical Perspective and Vision for the Future Satoru Iwata, Nintendo North Hall D, Lower Level	9:00am - 10:00am Inside Kinect: Skeletal Tracking Deep Dive Zsolt Mathe, Microsoft Room 123, North Hall	
10:00			10:05am - 10:30am Halo: Reach Effects Tech Chris Tchou, Bungie Room 304, South Hall
11:00	10:30am - 11:30am Dynamics: The State of the Art Clint Hocking, LucasArts Room 304, South Hall	10:30am - 11:30am Classic Game Postmortem - Bejeweled Jason Kapalka, PopCap Games Room 134, North Hall	11:00am - 12:00pm Classic Game Postmortem - Maniac Mansion Ron Gilbert, Double Fine Productions Room 134, North Hall
12:00			
13:00	LUNCH	LUNCH	LUNCH
14:00	1:30pm - 2:30pm Cinematic Character Lighting in Star Wars: The Old Republic Ben Cloward and Aaron Otstott, Bioware Room 308, South Hall	1:30pm - 2:30pm Industry Lessons Learned and Applying Them to the Road Ahead Cliff Bleszinski, Epic Games Room 134, North Hall	2:00pm - 2:25pm The Data Cracker: Building a Dead Space 2 Visual Game Analytic Tool Ben Medler, EA/Visceral Games Room 132, North Hall
15:00	3:00pm - 4:00pm Designing Games for the 43-Year-Old Woman Chris Trottier, Zynga Room 303, South Hall	3:00pm - 4:00pm The Environment is the Orchestra: Soundscape Composition in Limbo Martin Stig Andersen, Playdead Room 220, East Mezzanine	
16:00			4:10pm - 5:00pm Breaking into AAA Game development: Ask the Pros thatgamecompany, LucasArts, Zynga, Foundation 9, Epic Games Room 305, South Hall
17:00	CHECK OUT EXPO (OPEN FROM WEDS TO FRI)	4:30pm - 5:30pm Data Analysis on Player Behavior in Eve Online Brynjolfur Erlingsson, CCP Games Room 300, South Hall	
18:00			

KEY

- Audio
- Business
- Game Design
- Production
- Programming
- Visual Arts
- Summits
- Career Seminars

GDC

GDC 2011 KEY FACTS

■ 9am to 6pm
 ■ February 28th to 3rd March
 ■ Moscone Center, San Francisco, CA
www.gdconf.com

■ Registration starts 5pm, Sunday 27th
 ■ Registration hotlines:
 (415) 947-6926
 (866) 535-8997

GDC Expo: March 2nd to 4th
Summits and tutorials: February 28th to March 1st
Main GDC: March 2nd to 4th

SUMMITS:
 ■ AI Summit February 28th to March 1st
 ■ GDC Education Summit February 28th to March 1st
 ■ Game Localisation Summit February 28th
 ■ GDC Smartphone Summit February 28th to March 1st
 ■ Independent Games Summit February 28th to March 1st
 ■ Social & Online Games Summit February 28th to March 1st
 ■ Serious Games Summit February 28th to March 1st

Relentless energy

Brighton developer Relentless, most famous for conceiving the retail-centric Buzz franchise, has created its first title for iOS. **Will Freeman** caught up with studio co-founder and executive director Andrew Eades to find out more...



Above: Andrew Eades, co founder of Relentless, which has created its first iOS game with Quiz Climber

You've just announced your debut on iOS. What is the game like?

The game is called *Quiz Climber* and we're very happy to have it published by Chillingo. It's a very simple concept for a social quiz. We had this idea that you could play everybody in the world at a quiz and see how you do. We've ranked the questions from easy to hard and you have to answer as many in a row correctly as you can.

Your position is compared to your friends so it gets extremely competitive. We made the first version in a couple of weeks and tested it on a small group of people. We instantly knew that we had a hit and didn't need to make any major changes.

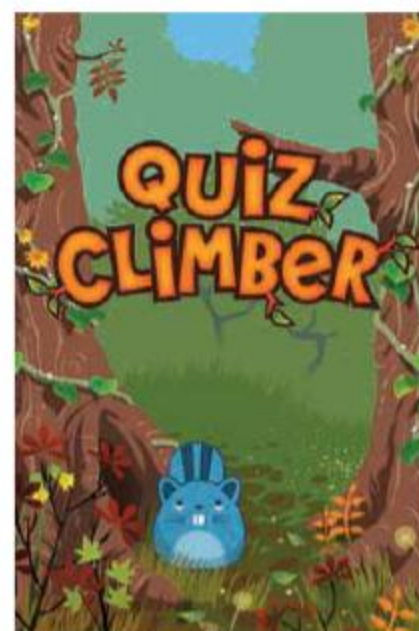
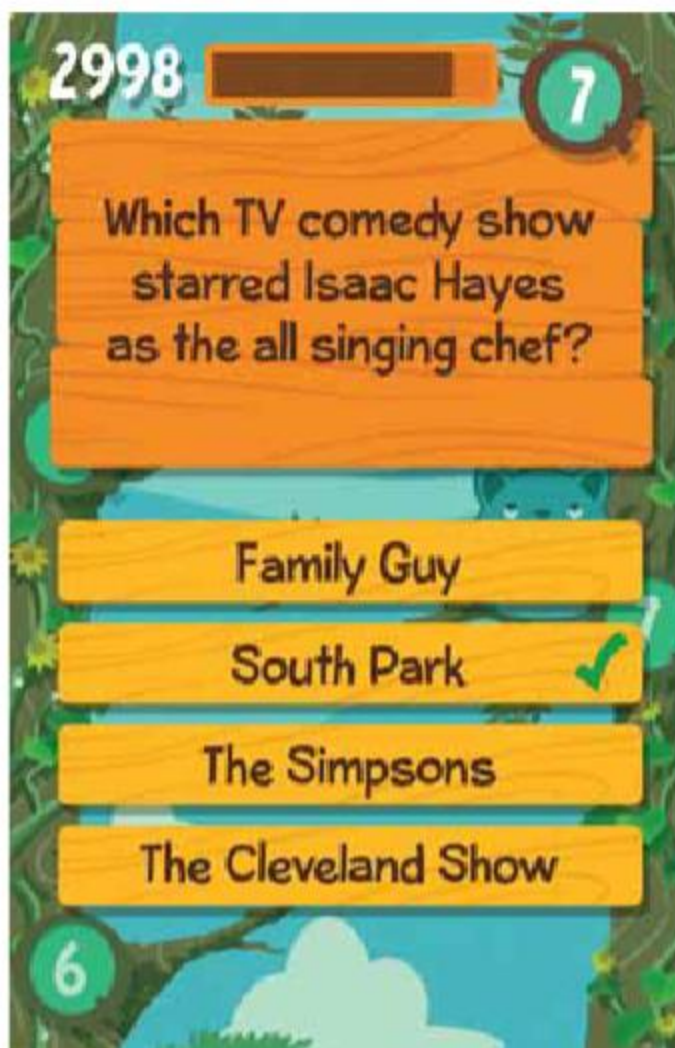
It was the same feeling that we had when we made the first playable of *Buzz*. It sounds simple but it's amazingly addictive. We've had it in a closed beta for some time testing out many cool features which we'll unveil as time goes by.

What motivated you to embrace creating a title for the iOS?

iOS gives us a great platform to work on with a very well understood business model. We love playing games like *Words With Friends* and *Bejewelled Blitz*, and considered *Quiz Climber* as a game that can sit well on iOS with those games.

Do you have any plans to develop more iOS titles?

We are going to concentrate on *Quiz Climber* and support it for a while. We'll introduce new features along the way and keep



improving it so we have no plans today to make any new games on iOS, but we continue to evaluate iOS and Android as potential platforms for our future games.

From a development perspective, how easy has it been to move to the iOS platform from the existing formats Relentless handles?

We have used Unity for a while as a quick prototyping tool and we chose to use it for *Quiz Climber's* development as it gives us the look that we wanted and is well supported

“ Quiz Climber was best suited to iOS for its first release. We're looking at other platforms. We're very interested in emerging TV platforms. ”

Andrew Eades, Relentless

on iOS. Using Unity meant it wasn't as big a step as it could have been. We're used to making high-end console games so it's more about keeping the design in line with the platform's strengths than anything else.

What challenges have you faced in tackling developing for iOS?

The main difficulty is keeping to a 20MB

download size. It's a little bit less than we're used to having on a Blu-ray disc. Unity has a large footprint and we've got thousands of questions as well as the beautiful graphics to cram into a small footprint.

How do you hope to address the tricky issue of discoverability on the iPhone?

The key for us is to not just throw this game out and hope. We've learnt a lot from self-publishing *Blue Toad* and we definitely didn't think we would have the same reach as we have with our PlayStation fans on iOS.

For that reason we partnered with Chillingo, because they are the experts in publishing the best iPhone games as far as we are concerned.

Does the move to iOS come as part of a plan to work on other platforms new to Relentless? Are there any that stand out?

Our plans are to diversify onto other platforms. We decided that *Quiz Climber* was best suited to iOS for its first release. We're looking at other platforms too. We're very interested in emerging TV platforms and we're looking into them at the moment.

The point is that we make games that are accessible to more than the hardcore and they like to play on devices that they own without needing to buy an expensive console. We still address console as our games don't exclude more hardcore gamers and as their pricing becomes more mass market, consoles will naturally become more mass market.

www.relentless.co.uk



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David Volypka, Creative Director/GM Kaos Studios



KAOS
STUDIOS

THQ

HOMEFRONT
RELEASED 18-MARCH 2011

morpheme
advanced animation system

NATURALMOTION

ANATOMY OF A BLOCKBUSTER

Our monthly dissection of a recent hit game...

Mass Effect 2

PUBLISHER: EA

DEVELOPER: Bioware

FORMAT: Xbox 360/PC/PS3

PRICE: £49.99/£34.99

CHART SUCCESS: 2m sold at Xbox 360 launch

<http://masseffect.bioware.com>

THE SENSATION

The release of *Mass Effect* was an important moment in the history of the Xbox 360. While certainly not as groundbreaking a console-specific release as *Halo: Combat Evolved* was a generation earlier, the BioWare title took on a great deal of expectation in Microsoft's name. It didn't disappoint, either. Pulling in a Metacritic average score of 91, *Mass Effect* was lapped up by 360 owners.

Nearly three years later, the wave of good feeling generated by *Mass Effect* had not abated. The 2010 release of *Mass Effect 2* on Xbox 360 and PC was heralded not only by a marketing extravaganza, but a frenzy of public excitement. One year on, *Mass Effect 2* was released on PS3 with a substantial amount of DLC packaged in with it. Suddenly, what was that curio on the other console for many became a beloved gem all over again.

THE GAME

A culmination of over a decade's worth of top-flight games development, *Mass Effect 2* plays out like a best-of reel of BioWare's greatest achievements to date. It has the epic scope of its direct predecessor and 2003's excellent *Star Wars: Knights of the Old Republic*. It has a cast of wild, outlandish and rewardingly deep characters reminiscent of the *Baldur's Gate* series and *Dragon Age: Origins*. BioWare's beloved choose-your-own-adventure style of storytelling is honed down and shined up to produce an engrossing universe of cause and effect. Previously clunky combat systems have become breathless, duck-and-cover shootouts through beautiful intergalactic surroundings.

THE STUDIO

Founded back in 1995 by Ray Muzyka, Greg Zeschuk and Augustine Yip, BioWare has come a long way in the past 16 years. Headquartered in Edmonton, Canada, the studio released an impressive canon of titles over the 10 years of its independent existence. *Shattered Steel*, *MDK2*, the *Baldur's Gate* and *Neverwinter Nights* series, *Star Wars: Knights of the Old Republic* and *Jade Empire* all displayed a fundamental adaptability to and understanding of all types of games development. It also showed off a capability to work with a variety of publishers and produce impressive content every time.

Partnering with the now defunct Pandemic Studios in late 2005, BioWare began work on its next game, a sci-fi RPG of its own creation

called *Mass Effect*. A month before that game's release, BioWare was bought by EA.

UNIQUE SELLING POINT

Space, essentially. Freedom. Dynamic, relevant and interesting dialogue trees delivered with an almost uniform level of impressive acting ability. A galaxy of planets to explore, harvest and kill bad guys on. Almost limitless combinations of weapons and abilities to fight with, and a host of squadmates to hire and gain loyalty from. You can even create your own hero, though he or she will always be called Shepard. *Mass Effect 2* offers gamers the sensation of being directly involved in the development of the elegant narrative arc that sweeps over from the opening space battle to the closing one.

WHY IT WORKS

Mass Effect was good. *Mass Effect 2* is great. Falling in with the increasing trend of video games sequels building on the overall quality and success of their progenitors, *Mass Effect 2* represents many of the aspirations of the first series title fully realised. The title is space opera in the grandest, silliest and most

thoroughly entertaining tradition. It combines an array of vastly different gameplay experiences seamlessly linked through a fast-moving plot that skips from one end of the galaxy to the other and back again. It delivers the full spectrum of human – and non-human – emotions convincingly to the player through the personalised character of John or Jane Shepard.

TRY IT YOURSELF

Don't be scared by the scope of what BioWare has created. Half of the magic of the process seems to lie in knowing what not to include. The seemingly endless environments on offer are brilliantly designed in their linear simplicity, the odd dead-end or locked door suggesting what the mind fills in by itself. With a deep, believable and well written universe at your disposal, linking consistent levels together with an enjoyable 'travelling' mini-game in between will create an absolute sensation of freedom. Top-notch dialogue trees and the old multiple-endings carrot will only increase this sensation significantly once again. If you have love for the worlds you can imagine, that will translate into the game you can create within them.

The 2010 release of BioWare's *Mass Effect 2* was heralded by a marketing extravaganza and a frenzy of public excitement



Which of these games features
a yellow VW Beetle on the cover?



Project Gotham
Racing



Need for Speed:
Hot Pursuit 2



Midtown Madness



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//COMMENT: BUSINESS

The devil's in the data

by Rick Gibson, Games Investor Consulting



Above: Zynga's CityVille. The studio has built its empire from design by datamining user activity

WHEN WE FIRST STARTED writing about what's come to be called social gaming, it was clear that any company looking to enter the space would need a new skill set to successfully navigate the social graph.

Principal amongst them was learning how to deal with the fire hydrant of data on user behaviour. The resulting discipline of analytics has rapidly become central to the success of all social games companies, but its use without moderation could hamper future market growth.

ANALYSE THIS

Customer profiling used to mean – and still does for some traditional publishers – focus groups and the odd consumer survey; fairly blunt marketing instruments that rely on consumers being transparent and accurate (a rare occurrence). Early web businesses bought off-the-shelf client-based solutions that analysed log files and counted click-throughs and page impressions to convert them into advertising dollars. Processing and bandwidth constraints drove providers to sample a tiny proportion – perhaps 10 per cent – of total usage and then extrapolate, charging clients for every byte processed.

Many analytics companies still use the sampling model, which often results in serious inaccuracy, is often not real-time and can be unaffordable for those games services with bulky user data. Many, particularly those selling virtual goods, find sample-based solutions not fit for purpose, and so turn to new, cloud-based solutions to provide detailed, real-time analysis of the data flow.

These new analytics tools allow unprecedented insight into your players –

who they are, where they came from, what they play, what and how they buy, who they recruit on your behalf and, ultimately, how valuable they are to you. Once you've asked whether that cherished new gameplay mechanism actually works or if those expensively acquired new customers are

“There's huge mileage in watching your customers closely and sensible use of analytics will result in more sustainable, profitable companies.”

worth it, it becomes apparent that analytics can inform all parts of your online business. These hard-to-find practitioners of the dark arts can have dramatic impact on businesses large or small. However, analytics are useful only to studios prepared to turn the data into meaningful actions, which in practice means continual experimentation and continuous production, all of which can be a cultural challenge for staff schooled in fire-and-forget console development.

In the early days of social gaming, before microtransactions became a real revenue source on Facebook, many failed to realise how critical analytics would become to their businesses. What differentiated Zynga was that, since its inception, management placed

data mining at the heart of its operation. Today scores of analysts continuously sift Zynga's vast customer data flow in real time, segmenting their audience, optimising customer acquisition and passing intelligence to designers and programmers to improve the customer experience, and, ultimately, drive up sales.

This more detailed understanding of customers means practitioners understand what, how, why and when customers purchase and can therefore make more of what they like best. They can react to customers faster, which keeps players engaged and buying for longer. Above all they smooth out any friction to deepen engagement, raise conversion rates and minimise customer drop off. This can add up to businesses that are more efficient and responsive to consumer demand and ultimately more profitable because there are fewer unknowns about their existing users.

But here's the serious flaw: analytics, however real-time, are fundamentally retrospective. They can only make you aware of what today's users do with your existing app. They can't tell you what new app to build tomorrow for new audiences. This retrospection is patently visible today in many social game designs, some of which are repetitive and self-referential.

ANALYSE THAT

The sheer numbers of saccharine, flavourless, me-too titles aping 1990s games designs show the perils of allowing your existing players to lead you by the nose. Without checks and balances, analytics will predetermine what you design, resulting in constant evolution but few – if any – revolutions. Have any brave new frontiers yet been discovered in social gaming? What innovations do arise are swiftly copied because barriers to entry are so low. Zynga, a fast follower par excellence, will snap up nice little ideas as well as a dozen or so companies, doing a decent impression of its silverbacked forebear, Microsoft. One reason for Zynga's acquisitiveness, as repeatedly demonstrated by Microsoft and Google, is that when innovation is hard to create internally, management compensate by trying to buy it. Historically, few succeed, and analytics can exacerbate this tendency.

There's undoubtedly huge mileage in watching your customers closely, and sensible use of analytics combined with inspirational games design will result in more sustainable, profitable companies.

Rick Gibson is a director at Games Investor Consulting, providing research, strategy consulting and corporate finance services to the games, media and finance industries.
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//COMMENT: OPINION

Understanding Ownership

by **David Braben**, Frontier Developments

Right: Sony has been hurt by hackers releasing information recently – but tomorrow it could be the rest of the development community that is affected

WHEN WE BUY a house on a plot of land, we don't own the mineral rights even if we 'own' the land. A local coal mine does not have to seek out the permission of the numerous owners of all the different columns of rock they are tunnelling through, nor can the 'owner' of the surface tunnel sell the coal or oil that might be there, unless they have a separate right to do so. Even with the surface ownership, we cannot do what we like.

Almost all countries have some sort of building/planning control, and that is a good thing. Maybe it is annoying to us, but it also stops our neighbours doing things we might hate. In effect we have a licence to use the land a certain way from the country in which it sits, but we call it 'ownership'.

Buying a PlayStation 3 (for example), also does not give me unrestricted ownership of it. If I 'dig' into it, I can't just sell or even give away all the information I find. It really annoys me when hackers claim they can do what they like with what they find, especially when it is destructive to the security of all the other PS3 machines. These people are damaging to everyone with a PS3, not just to the games dev community, because of future security measures that will be needed, but there seems to be a blind spot amongst some players, perhaps because they imagine it will mean 'free stuff' in the future.

SECURITY MEASURES

If someone buys the same model of car as me, and then after studying it at length announces to the world a good way of breaking into that car, it hurts me. I will have to take extra security measures thereafter, and it damages the manufacturer of that car. In this case though, there is not an equivalent

blind spot, perhaps as finding a quick way of breaking into all cars of that type does not mean free fuel in the future. Almost everyone would agree it is a bad thing, and would get angry with such a person.

There have been suggestions that releasing hacking information is an issue of freedom of speech. That is such rubbish.

“There have been suggestions that releasing hacking information is an issue of freedom of speech. That is such rubbish.”

Some freedoms of speech are also curtailed for sensible reasons. Broadcasting easy ways of breaking into cars is bad for everyone affected, as is the freedom of speech cliché that is always wheeled out – shouting 'Fire' in a cinema, which creates a real risk of harm to others. It is common sense not to do it.

There is a more subtle side to this not 'getting' ownership. That is the failure to acknowledge intellectual property rights, and rights to a service.

When we buy a new car, we buy an item and a service. In this case, it is mostly the item we are buying, but the service is significant. This is a service, and if you sell the car, the warranty and maintenance cover does not restart.

INTO SERVICE

A game is an item and a service too, except there are people out there trying to prevent publishers and developers detecting whether a game is new or has been sold again. The equivalent is adjusting the paperwork and registration number on your second hand car to get a new warranty and free maintenance out of your garage. We see shops using polishing machines on used game discs, and even replacing the outer sleeve to make a scratched game look new. With a game, the service is a combination of the single player game and online support. Online bandwidth per user is something that gradually dies down after a game is some months old – but if it is then passed to another user, those costs are incurred all over again for the new user – but the publishers providing the service see none of the 'pre-owned' revenue to cover it.

It is all about what is reasonable. Hacking into a machine as an academic exercise is one thing. Broadcasting the information is another. We should all be prepared to roundly condemn such people. Today it is Sony that is hurting.

Tomorrow it will affect all of us in the development community, so we should stand against it together, now.

David Braben is the founder of Cambridge-based Frontier Developments. Best known as the co-creator of *Elite*, Braben has contributed to, designed or overseen a number of other projects including *Frontier: Elite II*, *Dog's Life*, *Thrillville*, *LostWinds* and *Kinectimals*. Frontier is currently developing his next title, *The Outsider*. He is also closely involved with Skillset. www.frontier.co.uk

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//COMMENT: LAW

Readily available?

by **Tatiana Kruse**, Salans

Above: Foul? A football game and its broadcast rights could have an effect on wider copyright laws going forward

IT IS AN infringement of copyright in a work to, without the owner's authorisation, make it available by electronic transmission in such a way that members of the public may access it from a place and at a time individually chosen by them.

This includes via the internet. It is an infringement of the database rights in a database to, without the owner's authorisation, extract or re-utilise all or a substantial part of the contents of the database, including by making them available online.

COVERING THE TERRITORY

Where does the act of making available take place? The answer to this question will determine which territorial rights are infringed and which courts have jurisdiction over the infringement claim. In the case *'Football Dataco and others v Sportradar GmbH and Sportradar AG'* (November 2010), Mr Justice Floyd decided that the act took place where the servers were located.

The claimants were involved in the creation of exploitation of data such as goals scored, goalscorers, own goals, penalties etcetera, in football games organised by the various football leagues, including the Premier League. The data was compiled in a database called 'Football Live'.

The defendants were established in Germany and Switzerland respectively. They had a website which provided live scores, results and other statistics relating to football matches and other sports, compiled in a database called 'Sport Live Data', which was a

“ A service provider making works available online will not be liable for primary infringement of UK rights, if the server is outside the UK. ”

competing service to that of the claimants. The claimants alleged that the defendants copied, extracted and re-utilised data from Football Live and, in so doing, infringed the claimants' copyright and database rights.

INTELLECTUAL ABILITIES

In order to bring a claim in the UK, the claimants needed to show a good, arguable case of infringement of UK intellectual

property rights. The defendants argued, at an interlocutory hearing, that they performed no infringing or other acts in the UK.

So far as 'making available' is concerned, the judge decided that, as a question of law, the defendants' acts took place outside the UK. He said that the act of online transmission is committed, and committed only, where the transmission takes place.

The judge did, however, find that the English courts had jurisdiction to hear the claims, because, though not ideally drafted, they alleged joint infringement by the defendants with the users of the website service, who were alleged to have committed acts of reproduction and extraction in the UK. The matter could therefore proceed to full trial in the UK.

So, a service provider making works available via the Internet will not be liable for primary infringement of UK rights, if the server is outside the UK but, depending on the facts, may be liable for joint infringement or authorisation. We will have to wait and see what happens in this case.

Tatiana Kruse, of international law firm Salans LLP, is specialised in IP and IT law and has a particular interest computer games. She can be contacted on +44 (0)20 7509 6134. tkruse@salans.com



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BRIGHTON ROCK

A look ahead to some summer seaside fun at Develop in Brighton 2011



What is important is that this conference is reflecting the needs of this fast-paced industry, which means keeping close to the development community, talking to game developers and working with our advisory board, which is made up of some of the UK's biggest talent."

Conference director Ali Fearnley is clearly looking forward to putting on the Develop Brighton conference again this year. Having seen it substantially grow in size and popularity since she took on her current position in 2007, her enthusiasm for the summer event remains undiminished. Now in its sixth consecutive year, the conference continues to draw interest from all corners of the development industry.

"This talent always helps us to make sure that the conference programme will always be addressing the most topical and relevant

development issues, so it really is a conference made by developers for developers," she continues.

"Something else we always set out to achieve is delivering practical sessions which offer knowledge and information that will actually help people in their jobs when they get back to the studio. And with our seven tracks covering everything from Business to Art and Coding to Audio we're pretty confident that there is something for everyone.

"Also, let's not forget of course that the event is by the seaside in July. This gives the conference a unique relaxed and friendly atmosphere and Develop is as much about the after hours networking and socialising as it is about the learning."

As for what will be in store for those heading to the event, Fearnley outlines a busy schedule.

"Well, we open again with the very well-received Evolve conference on

THE MONTH AHEAD

A look at what March has in store for the industry and beyond...

MARCH 1ST:

The popular **Game Connection @GDC** business networking event takes place in the Moscone Center, San Francisco.



MARCH 1ST:

Saint David's Day. March is a popular month for patron saints' days (see March 17th). Recognising this, the Welsh got in there early.



MARCH 1ST:

The **Interactive Age Summit**, a global business journal for video games, will be held at the Sundance Kabuki Theater, also in San Francisco.

MARCH 8TH:

Dragon Age II is released, just in case all that interstellar adventuring in *Mass Effect 2* is wearing you out. Grab your 'longsword' fanboys.



MARCH 9TH:

Games Fleadh, Ireland's largest computer and console games programming festival, starts its two-day run at the Tipperary Institute.

MARCH 14TH:

Pi Day (3/14, get it?), a very special day in which people celebrate the mathematical constant π by eating pie! See picture for details...



MARCH 15TH:

Total War: Shogun 2 is released. PC gamers everywhere begin to consider a career change to Ultimate Army General.



MARCH 15TH:

The **Ides of March**. In all seriousness, if your surname is Caesar, you're allowed to just stay in bed today. It's definitely for the best.



MARCH 17TH:

Saint Patrick's Day. If you need to be told what to do on Saint Patrick's day, you likely overdid it this time last year.



MARCH 18TH:

Homefront is released. International politics take a turn for the worse as several national leaders mistake a video game for an actual declaration of war from the future.



MARCH 22ND:

Crysis 2 is released. The fate of the world is entrusted to a dude in a clever suit that leaves nothing to the imagination.



MARCH 30TH:

The two-day **Munich Gaming 2011** edutainment and entertainment conference kicks off at Haus der Kunst in the stately city of Munich.



30. und 31. März 2011



the Tuesday, which focuses on all that is new in game development. So it will help game developers tackle the issues arising from emerging platforms and digital marketplaces, connected gaming, user-generated content, and the crossover between games and Internet services," she says.

"Then on the Wednesday we always open with our main keynote speaker – it was Greg Zeschuk from Bioware last year who was brilliant, watch this space for an announcement soon. The Develop Conference programme is divided into seven tracks; Art, Business, Coding, Design, Production, Audio and The Den which is for more off the wall talks. Plus we're holding Games:EDU in Brighton again this year, a day of sessions aimed at games educators.

"There's also an additional focus for Indie developers this year. We're putting together something special for them on the Thursday, but I can't say too much at the moment, again

announcements coming soon. Then there is the Expo and of course Develop wouldn't be Develop without all the great stuff happening in the evening like the after conference drinks each day, the Awards ceremony, the charity Poker Tournament, the parties and a general propping up of the hotel bar until the wee hours."

As Fearnley points out, predicting industry issues that are likely to ascend will likely hold the Develop conference in good stead to remain a relevant favourite in the years to come.

"I think the launch of the Evolve Conference in 2009 and its subsequent success shows there was a real need for developers to keep up with emerging technologies, learn how to develop games for new platforms including mobile, iPhone, XBLA etc and explore new markets like social and casual gaming," she says.

"Last year, we introduced some free sessions for start-ups and developers



unable to pay for a conference pass, and this year something that reflects the current climate is an added focus for indie developers, both in terms of

sessions, networking opportunities and a new initiative where they can showcase their work."

www.developconference.com

DEVELOP DIARY

Your complete games development event calendar for the months ahead...

FESTIVAL OF GAMES NLGD

FESTIVAL OF GAMES 2011

April 28th to 29th
Utrecht, The Netherlands
www.festivalofgames.org

The Festival of Games is a worthy industry conference, a services and products expo and the largest European career fair in gaming. It also features a top-flight match-making in the 'pitch & match' 30-minute company meetings.

The two-day FoG has positioned itself as a meeting place for decision makers from the games industry and tech and entertainment sectors like TV, film, newspapers and telecom.

The Festival of Games attracts front-runners in business, strategy, marketing, finance, game art, design, technology and development. Focused on boardroom knowledge and deal-making, it's a platform for executives and entrepreneurs to expand their contacts and improve their business.

APRIL 2011

MCV INDUSTRY EXCELLENCE AWARDS 2011

April 7th
The Brewery, London
www.mcvuk.com

FESTIVAL OF GAMES 2011

April 28th to 29th
Utrecht, The Netherlands
www.festivalofgames.org

MAY 2011

NORDIC GAME 2011

May 10th to 13th
Malmo, Sweden
www.nordicgame.com

THE DEVELOP QUIZ

May 11th
TBA (see Develop-Online.net)
www.develop-online.net

CANADIAN GAMES CONFERENCE

May 19th to 20th
Vancouver, Canada
canadiangamesconference.com

MONETISING MOBILE

May 25th
BAFTA, London
www.mobile-ent.biz

MCM LONDON EXPO

May 27th
Excel, London
www.londonexpo.com

JUNE 2011

E3 EXPO 2011

June 7th to 9th
Los Angeles, US
www.e3expo.com

MCV GAMESFIVES

July 1st
London, UK
www.gamesfives360.co.uk

JULY 2011

DEVELOP CONFERENCE

July 19th to 21st
Brighton, UK
www.develop-conference.com

DEVELOP AWARDS

July 20th
Brighton, UK
www.develop-online.net

AUGUST 2011

EDINBURGH INTERACTIVE ENTERTAINMENT FESTIVAL

August 11th to 12th
Edinburgh, Scotland
www.edinburghfestival.co.uk

GDC EUROPE

August 16th to 18th
Cologne, Germany
www.gdceurope.com

GAMESCOM 2011

August 17th to 21st
Cologne, Germany
www.gamescom-cologne.com

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BETA

DEVELOPMENT FEATURES, INTERVIEWS, ESSAYS & MORE

"As handheld hardware power grows, so do expectations."

Julain Gollop, Ubisoft, p31

How Kinect hacks drive innovation

p36



Uncharted 3 and the future of narrative

p50



QA and localisation status report

p45



Modern Marvel

A new MMO built on the Unity engine by The Amazing Society will attempt to revolutionise the Marvel gaming brand, pages 24 - 27



COMIC GENIUS

Casual games studio The Amazing Society is all set to launch a Marvel Universe MMO built with the Unity engine. **Stuart Richardson** met the studio top brass to find out how such a bold project came about...



Superheroes are nothing new. Tales of strange beings with incredible abilities have been told for generations. The Hulk wouldn't exist without Dr Jekyll and Mr Hyde, without werewolves there would be no Wolverine, and the Thor of comic book legend would be nothing if it were not for, well, the Thor of ancient myth.

Comics do something particularly special for superheroes however. They give them the chance, amongst other things, to not have to be quite so serious all the time. The corruptive nature of power blighted the experiences of gods and monsters for thousands of years. Today, for the most part, they get to just beat seven shades of justice or criminality out of each other.

As vice president of The Amazing Society – a casual games studio working under the Gazillion studios umbrella – Jason Robar has long since understood exactly what it was that he liked about the modern interpretation of superheroes.

"I grew up with these stories, collecting comic books and knowing everything about who these heroes are," he happily enthuses.

"Now I can share my love of these heroes with my own children. It was a fantastic opportunity to be able to work with the creators of these characters, to meet Stan Lee and give these heroes a new spin that is both fun and funny."

Robar is discussing the development of *Marvel Super Hero Squad Online*, the near-complete Amazing Society MMO project based on the popular Hasbro toy line and subsequent cartoon of the Marvel Universe, and built on the Unity engine.

The game, like the toys and cartoon, offers a uniquely light-hearted and streamlined interpretation of the Marvel canon, which Jay Minn, creative director at The Amazing Society, expands on.

"Being able to get a little bit irreverent with these characters was great. Wolverine will throw a pineapple up into the air and chop it to bits, She-Hulk will take a picture of herself, or little funny things that are part of their characteristics," he says.

"One of the big, most important parts of the *Super Hero Squad* IP is the humour. We've been able to take that even further than the cartoon guys were able to do. We talked to the director of the animated series and he told us to keep pushing. I think he saw that we were having a lot of fun and he was backing us completely."

Robar picks up the theme again, describing his hopes that this attention to humour will exploit what he sees as a continually growing gap in the market.

"I think that one of the things that is overlooked sometimes in the games industry is humour, although the British can still do it pretty well," he says.

"A lot of times we take the games too seriously and we forget that the player is there to have fun. So we think that anybody

of any age can have fun playing with these characters. Those are the games you talk to your friends about, right?"

You tell your friends about the games that made you laugh, sometimes far more than you do about the time that you got, you know, another headshot."

DOING IT FOR THE KIDS

That the game has something of a more elementary aesthetic is by no means an indication of tunnel vision in terms of its target audience, however.

"The great thing about the Marvel universe is that it does appeal to just about everybody. Everybody likes being a hero, and everyone likes laughing. As long as we deliver a good game I think that almost anybody can have fun with it," Robar says.

"I think that one of the things that is overlooked sometimes in the games industry is humour, although the British can still do it pretty well."

Jason Robar, Amazing Society

"At the same time we did focus in on some particular groups – the dads and the kids. To make sure that it was approachable for a younger audience, we had control schemes that they could use. Kids start off being very afraid of multiplayer. If you watch people who come online for the first time, no matter what age they are, they tend to have the same desire to lean towards a more solo-orientated experience.

"But as they get more comfortable, then they seek out a more cooperative experience. When they are older, or if they have been playing online for a long time, then they start to seek out more competitive experiences. So we clustered different games and play-patterns around those three gaming experiences, solo play, co-operative play and competitive play."

Minn expands on the benefits that The Amazing Society aimed to offer its younger players through the development of the control layout.

"We're targeting the lead capabilities of kids – physical dexterity, the ability to use a mouse, keys and a combination of the two change drastically between the ages of six and eight," he says.

Developing a game that could challenge and entertain a wide range of ability levels was a challenge that both The Amazing Society men seem to have enjoyed.

"I think that it was both interesting and challenging at the same time. We have a



saying that sometimes the best games come from deciding what not to do," Robar states.

"One of the things I really loved working with was this question of 'what happens when I push the button?'. We get a lot of complexity out of our game designs by limiting ourselves to how many buttons we can be pushing."

Minn picks up on the point and describes the final control set-up that the development team settled on, and why they did so.

"You can play the whole game just using left-click for combat. Click and drag to move, click on bad guys and good things happen, you know," he says. "There is a right-click move, but it's a 'spice', you don't have to do it. We have the space-bar for jumping but it's very simple and easy to understand. Even at a very early focus group this was a very important idea, we had kids coming in and playing our game very early on.

"We were able to see if, with just a little bit of instruction, if they were able to go around and to have a good time, while at the same time feeling 'superheroic'. I think that we captured that in the game."

UNITE AND FIGHT

This ambitious project is brought to life with Unity. It's the first time the engine has been used for an MMO, and both Robar and Minn are keen to outline the numerous reasons why the engine handles the task well.

"One of the things that happened with Unity was that we were able to rapidly



Marvel Super Hero Squad Online is based on the popular Hasbro toy line and the subsequent cartoon of the Marvel Universe





Marvel has been very proactive in ensuring the new MMO is a hit, says developer The Amazing Society

prototype a variety of different game experiences. Within about six weeks of starting the project we had playable prototypes of solo, cooperative and competitive play," Robar enthuses.

"So Unity was great for us in that it got us up and running and putting the game in front of people in just no time at all, testing what was really fun.

"Now this business is really sort of 'science, plus art, equals fun,' and that magical formula is really hard to get right. You have to test early and see if the players are laughing and having fun. 'How fast can you get to the fun' has really been another core philosophy for us. Get to the fun fast, test it, make sure that it is right."

Minn points out that, similarly to the manner in which the studio team knew what they wanted to do with the Marvel IP, knowing what they wanted to take from the Unity engine was also particularly important.

"The thing is that every engine has its limitations. Unity let us get the gameplay quickly, but we ran into other limitations. For example, the UI display system in Unity actually wasn't very good," he says.

"They knew it and we knew it, but we walked into it eyes-open, and we ended up writing a bunch of custom code to make up for that. We chose this engine because we loved the toolset. We were able to bring in 3D

assets, animations and models and special effects, and to be able to test gameplay very quickly.

"I value that higher than anything else because you can fob your way around technical problems, but it is very hard to capture what is fun. We have this crazy job, which is to take this unforgivable activity called programming and turning it into something as creative and unknowable and analog as making fun."

“With the focus groups we were able to see if the kids were able to go around and have a good time, while at the same time feeling ‘superheroic’”

Jay Minn, Amazing Society

Minn's sincerity is almost ferocious, and it's clear that the process of games development is something greatly important to him. "For me the ability for Unity to get us a toolset that let us get into gameplay right away was worth whatever we ended up having to pay in terms of technical limitations," he says.

"To be able to make a game of this visual fidelity and quality to be delivered in-browser is amazing. I feel that the old way of people going out to stores to buy boxes is coming to an end, and now it's all about streaming, and on-demand.

"Unity has allowed us to do that for this game. You just click a button if you already have the Unity plug-in, otherwise just click and play the game very seamlessly downloaded through your browser. You can have it so that it looks just like any other triple-A PC game that you can play, but there is no disc."

BLOODY MARVELOUS

The manner in which Marvel has aided and abetted the development of *Super Hero Squad Online* is also a topic that draws a great deal of enthusiasm from The Amazing Society team.

"Jay and I have worked with licenced IP at other companies in the past, and in many cases you can get many people who don't understand what the fun is. They know their brand, but they don't necessarily know what a video game is," Robar says.

"But Marvel has been very supportive, and just an incredible company to work with. We've worked with a lot of companies and by far and away this has been the easiest working relationship we've had."

Minn shares the sentiment.





"They've guided us in terms of things like telling us that Scarlet Witch doesn't fly, but Spider Woman does fly, things like that. They would tell us what not to do but also encourage us to do new things that felt right to them."

"We've had a relationship with a man called Tod Jefferson, he's been our liaison with Marvel, he's VP of games there now, and we've been working with him for something like two years," he explains.

"We met with him at the early part of the game project, then more often – every two weeks in person at first, now about once a month or so – but we still have a weekly phone call, it's very, very high-touch, and that's been a huge boon."

The proof of how much all this cross-industry interaction has helped the game's development process will surely come from the reception that it has, both critically and commercially, upon going live. As with all MMOs, the number of people who are still playing six months to a year down the line is

also just as important again, if not more so. Both Robar and Minn are keen to

outline the plans that are in place to make sure people don't just sign up, but keep on coming back for more content.

"The great thing about the Marvel licence is that it's full of over 5,000

characters and has an endless depth of material. There is always a fan who has a favourite character or villain or even a favourite setting," Robar says.

"Marvel heroes go everywhere from under the sea to outer space, so there is an infinite amount of content to work with, and for us to keep building this game up with."

Minn relates the continuation of the comedic tone as being as consideration taking the game forward.

"You can go snowboarding with The Human Torch, that's kind of funny," he says.

It's been great making this game. I got to enjoy making it and I will enjoy playing it with my kids. We have come out with a product we can all be proud of.

Jason Robar, Amazing Society

"You can go racing mini-karts, the Hasbro toy line has the Arachno-Roadster, Spiderman's car, and Wolverine has a car, so you can imagine that there will be a lot of expansions where we take the characters and do all kinds of other activities."

"It'll be similar to what the Mario guys do – they play baseball, they play soccer, they go kart racing, they of course do their classic competitive gameplay. Princess Peach gets

kidnapped yet again and Mario has to go rescue her, so that's the main thing but they also do a lot of other activities."

As for the monetisation plans, Robar explains the processes that the MMO will use to get the most out of the project.

"We set out to develop a sort-of hybrid monetisation model. It will be free to play but with microtransactions, but it also allows you to join the club and have a subscription so that there is a package," he says.

"Parents just sometimes want a predictable way to pay for something, but at the same time people want to do what they want to do. So if you just want to buy the hero, you can do that, you can use microtransactions to get your goal and buy your hero. We've got a kind-of free-to-play with both options available to you."

The stage is set, then, and the heroes and villains have taken their positions. The rest is up to the average folk, the super-less. What they will make of the latest iteration of the Marvel brand is anyone's guess, but Robar points out that, whatever the future has in store, the road to this point has been something pretty impressive in itself.

"It's been great making this game. I got to enjoy making it and I will enjoy playing it with my kids as well. I have been able to take it home to show it to them – my harshest critics – every night, which has been helpful," he says.

"I think we have come out with a really great product we can all be proud of."

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The Marvel licence features over 5,000 characters, so there's an endless depth of material for the MMO



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HOW „MAKE THE GAME“ WORKS

STEP 1 Register: Eligible participants are all developers (companies/full age individuals) who officially register at www.makethegame.de by April 15, 2011 using the special form. Participants will receive a package of information via e-mail after registration. Please note that you can only register games that are not yet published.

STEP 2 Submit your game: Now complete your browser/social game and submit it along with all necessary documents (video, instructions and the complete game) by June 30, 2011. Only participants who meet the deadline can submit a game (see Step 1 Register).

STEP 3 The jury: The jury will decide in July 2011 which games will compete in the final round. All developers who have met the registration deadline (see Step 1 Register) will be notified.

STEP 4 Final round: The jury will choose the winners in August 2011. No more than five games will be selected. COMPUTEC MEDIA AG will present the potential winners publishing contracts to transfer the global marketing rights.

STEP 5 Announcement of the winners: The winning games will be announced at gamescom in August 2011 after the individual publishing contracts have been signed.

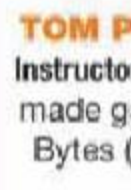
STEP 6 Publication: The marketing campaign for the winning game(s) will begin in September 2011 – reaching over five million readers.

THE JURY



HANNES BEUCK

CEO of Playa Games – with Shakes & Fidget, KickerStar and Bloodgame, Playa Games is one of the world's best-known developers of browser games.



TOM PUTZKI – Owner of Tom Putzki Consulting, Instructor at Games Academy/Mediadesign College – made gaming history as the founder of Piranha Bytes (Gothic) and co-founder of Phenomedia AG (Moorhuhn).



PETRA FRÖHLICH

Editor in chief at PC Games – since 1992 the authority for gaming journalism in Germany and responsible, among others, for PC Games, play3 and N-ZONE.



FLORIAN STANGL

Editor in chief at buffed.de, pcgames.de, videogameszone.de – responsible for the widest-reaching online portals in the PC and online games segment.



HANS IPPISCH

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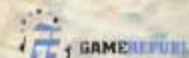
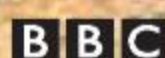
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The Portable REVOLUTION



Just when you thought iOS had won the handheld race, both Sony and Nintendo have hit back with new platforms. **Will Freeman** looks at what the 3DS and NGP mean for game developers...

Now that both the 3DS and NGP are both officially unveiled, it's clear the two devices are very different indeed. Sony's successor to the PSP is a 'console in your pocket' powerhouse, while Nintendo's 3DS is defined by an innovative display unique among gaming platforms.

That technological variety considered, it's clear that developers looking to work on handheld are going to have to expand their creative horizons and technical skill set significantly. The question is, can they rise to the challenge, or does the combined ambition of Sony's NGP and Nintendo 3DS spell trouble for today's studios?

CUSTOMER SATISFACTION

Certainly, satisfying the consumer is going to get increasingly hard, as Ubisoft's Sofia Studio producer and creative director Julian Gollop explains. "As the hardware power of these handhelds grows, so too do players' expectations," he says, "For Ubisoft, that means we have to make sure we're taking full advantage of the performance that's available in these systems."

That has meant optimising CPU and GPU usage on the 3DS without allowing stalls or

frame rate drops, and looking to adopt a new paradigm of software engineering based on multi-core processing to create NGP titles. Even for the biggest studios, those are sizable challenges indeed.

“As the hardware power of these handhelds grows, so too do players' expectations. We have to make sure we're taking advantage of these systems.”

Julian Gollop, Ubisoft

Technological advances also mean the kinds of gameplay experiences players expect look set to change too. The traditional 'short burst' experience currently *de rigueur* with iOS users may not translate well on Nintendo and Sony's new platforms.

"Most players spend 15 to 20 minutes with a handheld, then put it down for a while,

which is radically different from console play patterns," suggests JC Connors, studio head of Foundation 9's handheld specialist subsidiary Griptonite Games, which was one of the first studios to begin work on a 3DS title. "Here's where this generation is different, though – connectivity. The advanced hardware of both the 3DS and PSP2 can really help designers innovate new ways of keeping players engaged for repeat play, checking in with their friends, and syncing easily with their other consoles and devices."

The 3DS, with its SpotPass and StreetPass technology, and the NGP's equivalent wireless abilities mean that developers now have to assume handheld connectivity is something consumers will use. Fortunately, that challenge is an opportunity, says Gollop: "I think it will be a while before the full potential of this type of connectivity is realised, but the power and the potential is there, and as Nintendo builds a critical mass of 3DS customers, we think we'll see new and unique designs take hold as well."

EVER THE OPTIMIST

So far, so optimistic. Developers seem enthusiastic about the way player

Can the new handhelds match consumer expectations in the wake of a smartphone boom?



Brighton-based Zoë Mode is using the arrival of 3DS to give its Develop Award-winning PSP IP a new lease of life with stereoscopic graphics

expectation and new technology will change the kinds of games conceived. But what about the challenge of adapting to new platforms? Perhaps surprisingly, even here experienced developers' outlook is pretty buoyant.

"If you are a developer that has worked on PCs and high end consoles, and have an existing engine as we do at Rebellion, then I think the learning curve is a lot less steep than people who are new to these sorts of platforms," says Chris Kingsley, CTO of Rebellion, which has a wealth of experience crafting PSP games, and has now updated its Asura release to support NGP.

It would be foolish, however, not to recognise the challenge of what lies ahead. Taking the techniques perfected developing console games to the wave of multi-talented handhelds is going to be a challenge, and likely to be costly.

"The biggest challenge will be development budgets," admits Kingsley. "When you have more powerful machines to develop on, expectations are higher and you have to spend more time and money creating larger and more detailed worlds, and then populate them with smarter and more compelling AIs. With more power comes greater expectation."

The cost of making games clearly has studios in a pensive frame of mind, and

there's good reason for them to feel nervous about finances. Not only does the recent economic slump continue to furrow brows; there's also the fact 99 cent iPhone games changed consumer views on pricing.

"If you wanted to spend console money on developing a NGP or 3DS title, every penny of it would show, and clearly some of the launch titles have budgets two-to-three times what typical DS games have seen in the past," says Connors.

The advanced hardware of both the 3DS and PSP2 can really help designers innovate new ways of keeping players engaged for repeat play.

JC Connors, Foundation 9

"It simply takes more time and effort to design towards all the devices' advanced features, and consumer expectations on depth and production value have significantly changed with the advent of the iPhone's 99 cent games."

PSP GROWS UP

Looking for a moment at the next Sony handheld in isolation, it is apparent that developers are clearly enamoured by the NGP, and have faith that it can escape the fate of its predecessor, which many agree suffered something of a fade from grace.

"The NGP is an amazing piece of hardware," claims Connors, who clearly believes the 'PSP2' will empower creativity. "Unlike handhelds of the past, where many game design choices had to revolve around technical limitations, the NGP removes a lot of those and puts development and design decisions firmly into the hands of the creative folks on the team."

Many powerful devices of the past, though, have been hamstrung by their position at the cutting edge. Devices like the NeoGeo and Dreamcast offered infamous challenges, and at one point even the PS3's immense technical muscle looked set to overwhelm cash stretched developers.

"There are many challenges facing Sony, and a whole host of new competitors," says Kingsley. "But they've seen it before, and know how to make a great handheld console into a big success."

Again, optimism abounds, and the numerous studios familiar with developing for Sony platforms only have one thing on their minds; the new kinds of games they can

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Above: Nick Ricks (*Traveller's Tales*), JC Connor (*Foundation 9*), Paul Mottram (*Zoe Mode*), Julian Gollop (*Ubisoft*), Chris Kingsley (*Rebellion*)

make on a handheld that, on the surface at least, looks somewhat traditional and familiar.

"If we can incorporate imaginative uses of the NGP's GPS, 3G and the 3-axis compass, it could open up groundbreaking games that overlap game worlds with the real world, and that could deliver players a truly interactive entertainment experience that you can't get from sitting in front of your TV and home console," says Gollop.

NEXT DIMENSION PORTABLE

Meanwhile, the dawn of the 3DS is leaving developers a little more pragmatic. With an entire extra dimension to consider, both the technological and creative lessons that need learning will be very tough indeed. Studio models and team dynamics will need reworking, and a far greater union of effort may become essential.

"The 3DS really demands all your discipline teams working in perfect lockstep, way more than other consoles," says Connors. "The technical demands of a 3D handheld means that your artists, designers, and programmers have to coordinate and communicate perfectly, otherwise you'll end up with a gameplay experience that doesn't translate well to the new handheld."

With the 3DS, the new grammar of interactive 3D must now be mastered. Composition, player camera, geometry, colour saturation, and lighting; these and many others are the constants in game design that have been blown apart by the third dimension, leaving studios to pick up the pieces.

"The art and animation teams have seen some of the greatest challenges, tackling how we structure the environments to get the most out of the stereoscopic effect," says Nick Ricks, producer at Traveller's Tales, which has been at work taking *Lego Star Wars III* to 3DS.

"Determining where best to focus the camera, and the corresponding impact these decisions have had on the amount of screen depth when tracking a moving character, have taken time to balance correctly."

THE PARALLAX VIEW

Another developer taking existing IP to 3DS is Paul Mottram, executive producer at Zoë Mode. Having revisited PSP puzzler *Crush* for the Nintendo handheld, Mottram and his colleagues have learned plenty of lessons about 3D.

"Developers need to be very careful with objects that have negative parallax," he warns. "The illusion of depth is broken whenever they get clipped so this needs to be avoided at all costs."

That considered, Zoë Mode has spent a lot of time ensuring this never happens, and has also invested a great deal of energy to stop cameras intersecting geometry as the renderer automatically moves them depending on the 3D slider position.

Mottram's experiences highlight but a few of the many new factors 3DS developers will need to consider, but it is Mottram who is the first to point out the task in hand may be more approachable than some might think.

"The underlying technology has much more in common with other consoles and especially the original PSP," he says, revealing a detail that may mean many more studios than expected are already prepared for work on the 3DS. "This has made a lot of the fundamental engine work simpler than if it had been on a DS, thereby freeing up more development time for gameplay and polish."

"The teams have seen some of the greatest challenges, tackling how we structure the environments to get the most out of the stereoscopic effect."

Nick Ricks, Traveller's Tales

Mottram is not alone in his assertion that developing for 3DS shares much in relation to creating a game for a traditional console. Over at Traveller's Tales Ricks and his team have found that catering for the handheld's diverse new feature set means creating its games is now a process familiar to those with big box games machine experience.

"Our approach now includes far more of the disciplines, technology and techniques more commonly associated with console development. Meaning that there's now real parity between the console and 3DS experiences we're crafting," he says.

In the end, while the difficulties the 3DS and NGP introduce to developers are myriad, the opportunity outweighs the challenge. Past experience on both console and handheld capably arms long-standing teams, meaning the most pressing concern remains cost; something studios have long had to deal with, and will continue to do so.

The real problem, then, will be proving that the RRP for a NGP or 3DS game is worth the expense for customers spoiled by the minimised prices that have made iOS what it is today. Ultimately, it is that which will decide the fate of Sony and Nintendo's bold new endeavours in the world of portable gaming.

HANDS ON

The 3DS and NGP are very different machines from very familiar companies. So how do they compare?



NGP

- **External Dimensions:** Approximately 182x118.6x83.5mm
- **Cameras:** Front camera, Rear camera
- **Inputs:** PS button, power button, directional buttons, action buttons (triangle/circle/cross/square), shoulder buttons (right/left), right and left sticks, start, select, volume controls, rear touch pad (multi touch pad – capacitive type), Six-axis motion sensing system (three-axis gyroscope, three-axis accelerometer), three-axis electronic compass, built-in microphone
- **Wireless communications:** Mobile network connectivity (3G), IEEE 802.11b/g/n (n = 1x1)(Wi-Fi) (infrastructure mode/ad-hoc mode), Bluetooth 2.1+EDR, Built-in GPS, Wi-Fi location service support A2DP/AVRCP/HSP
- **CPU:** ARM Cortex-A9 core (four core)
- **GPU:** SGX543MP4+
- **Media:** Custom-designed flash memory based card



3DS

- **External dimensions:** Approximately 134x74x21mm
- **Cameras:** One camera on the inside, two cameras on the outside. Each camera is 0.3 megapixels (640x480)
- **Inputs:** Home button, power button, directional buttons, action buttons (A/B/X/Y), shoulder buttons (right/left) start, select, slide pad (360 degree analogue input), touch screen, internal mic, cameras, motion sensor, gyro sensor, 3D volume adjust, wireless switch
- **Screens:** Upper: 3.53 inches, wide screen with naked eye 3D support, 800x240 pixel resolution. Lower: 3.02 inches, 320x240 pixels
- **Wireless communications:** 2.4GHz. Data exchange with other 3DS units. Internet connection via wireless LAN access points (WPA/WPA2 IEEE802.11 compatible).
- **CPUs:** Two 266MHz ARM11
- **GPU:** PICA-200 graphics chip running at 133MHz
- **4MBs of dedicated VRAM/64MBs of RAM**
- **Media:** Game Cards (2GB max cards at launch), SD memory cards
- **Battery:** Lithium Ion



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DISKINECTED



Photo: iFixit.com

Microsoft's innovative camera controller is built using 80g of plastic, 15 microchips, 366cm of cable and 39 screws. But when unplugged from the 360, hackers academics and homebrew coders have found that these components add up to a major source of inspiration. **Will Freeman** reports...



When Kinect was first revealed to the public, it was seen by many as a way of opening the doors of a traditionally hardcore gaming platform to the casual masses. The device's launch line-up, dominated by dancing and fitness titles, compounded the sense that Microsoft's motion tracker was one for mainstream games design.

Then, come release, something happened. All over the world homebrew frontiersmen got under the casing of the device, eager to see how such a cheap peripheral could seemingly do what was previously the reserve of well-equipped laboratories with enormous budgets. Quickly researchers and hackers joined their ranks, taking a microscope to Kinect's dismantled innards.

INTO THE VOID

It turned out cracking open the outer shell and voiding all those warranties was worth the effort. When open-source software solutions that allowed Kinect output to be interpreted through a USB connection were made public, the floodgates were blown apart.

Since, new Kinect 'hacks' are an almost daily occurrence. From bedroom coders augmenting reality to academics using the device to give flying machines eyes, the breadth and scope of what has been done with a standard Kinect and a bit of ingenuity is quite incredible. Somehow, a device aimed at living rooms the world over has become a poster child for natural user interaction (NUI) researchers, roboticists, artists, game developers and hackers out to have some fun.

Josh Blake is a man who knows why Kinect has been embraced by this diverse range of technophiles. He is the founder of the OpenKinect 'open source community', a collective of likeminded innovators focused on the ongoing development and maintenance of the libfreenect software, which is a core library for accessing Kinect through its standard USB-out. Currently, libfreenect supports Kinect's RGB and depth images, motors, accelerometer and LED, and by the time you read this, it may even have access to the device's audio functionality.

Blake, who is also a proactive NUI evangelist, has come up with a phrase to the appeal of Kinect; 'democratic magic'.

"To put it another way, it's the democratisation of magical technology," says Blake. "The magic of the how the sensor works is just beyond our intuition, even when the other side of our brains understand the underlying math and science."

"In addition, anyone can buy a Kinect from their local gaming store, download free and open source drivers, and start creating. It's an extension of the personal computing movement where anyone can publish and be heard, but in this case anyone can experiment with innovative interactions. It gives us hope that we can create something amazing and that the people have a chance to make a difference in the future. That's democratic magic."

Right: Taking Kinect apart has led to a wealth of exciting re-appropriations



Above: UC Berkeley's flying quadrotor robot, which uses Kinect for as a depth sensor

It's an enchanting notion, and it sheds light on the fact that the Kinect hacks scene is about more than playful re-appropriation. While it's great to see a programmer controlling *Angry Birds* with his hands, or a Youtube video of a virtual invisibility suit, those achievements are in fact part of a far greater good that could eventually serve to better the mainstream game design that inspired Kinect.

But before we get ahead of ourselves, what exactly is going on under Kinect's plastic skin that makes it such an appealing prospect for the experimental?

UNDER THE BONNET

Mark Bolas believes it is because Kinect offers an available, affordable solution that replaces the expensive equipment previously needed for the exploration of NUI interfaces.

Like many of those branded as Kinect hackers, Bolas is in fact an academic. The associate professor at the University of Southern California's School of Cinematic Arts, Interactive Media Division and director of the Mixed Reality Research Lab at the Institute for Creative Technologies has, together with the lab's post Doctoral researcher Evan Suma, been using high end motion capture technologies to create virtual environments for training applications.

When the researchers adopted Kinect, and released a video where they used the peripheral to control *World of Warcraft* as a demonstration, the footage became one of the most famous Kinect 'hack's.

"It is interesting, on one hand a stodgy academic could say that there is nothing new here – the algorithms have been developed using high-end motion sensing technologies," says Bolas of Kinect's unique appeal. "On the other hand, the price point and form-factor change everything."

Garrat Gallagher is another researcher whose work with Microsoft's platform has become one of the most renowned Kinect hacks, despite its academic grounding. The systems robotics engineer at MIT's Computer Science and Artificial Intelligence Laboratory has created a system that apes the infamous technology from the movie *Minority Report* to allow remarkably fluid, intricate gesture finger control that far exceeds anything seen in a game, and he's done it with an affordable game controller.

"The accuracy is quite amazing for the price and, within the 'sweet spot', Kinect has resolution that rivals or surpasses any other ranging system on the market," suggests Gallagher. "Part of the reason Kinect is so good is that it does a lot of processing on board. This lets Kinect deliver an amazing out of data: around 300,000 points at 30 fps. This amount of data puts new challenges to researchers – to use this data in a timely manner, algorithms must run extremely fast."

Kinect also offers researchers something perhaps no other device does; a factor so simple it's easy to ignore.

"Because it's a device that is already present in millions of living rooms, this has fantastic implications on the impact of our work as researchers," says Suma. "For example, it's one thing to produce a game-based rehabilitation tool that patients can use when

they visit the lab, but when they can take it home and augment their treatment by playing with their friends and family, that's really revolutionary."

Whether you're researching NUI at a world leading academic research lab, or conceiving an interactive installation in a public space, the fact is that Kinect's user-friendly nature means the people you're trying to reach don't need to be engineers or programmers, and that makes it all the more appealing as a subject for hacks.

The very word 'hacks', however, may be holding back the progress being made by the likes of Gallagher and Bolas. The reality is that

Kinect gives us hope that we can create something amazing and that the people have a chance to make a difference in the future. That's democratic magic.

Josh Blake, OpenKinect

a huge number of the so-called hacks are academic endeavours, or homebrew contributions to technological progress. Yet despite this, Microsoft declined to comment when contacted for this article. Similarly, PrimeSense, which worked with Microsoft on designing Kinect and currently contributes to Open NI, is keen to make clear it does not support, cater for or condone Kinect 'hacking'. Open NI is an industry-led, not-for-profit organisation formed to certify and promote the compatibility and interoperability of natural interaction devices, applications and middleware, and makes available the open source OpenNI framework, an API for writing applications utilising natural interaction. The parallels with the Kinect hacks scene are obvious, but the distance between the two is made absolutely clear by PrimeSense.

A BLIND EYE

Elsewhere, Microsoft has also previously recognised OpenKinect's Blake as a 'Most Valuable Professional' for his work in the Microsoft Surface and NUI communities, but seems keen not to be seen as approving of the extra-curricular work done with Kinect.

Still, without officially recognised support the Kinect hacks scene thrives. Affordable, accessible and supported by a community of creators happy to share the fruits of their labour, Kinect is a device perfect for a hacks scene. It's so perfect, in fact, that those large scale developers making boxed games for the device have been watching.

"I think the Kinect hack community has leapt on this for the same reason we've been singing its virtues for the last 18 months," says Blitz Game Studios design director John Nash. "It's the flexibility, the innovation, the potential for doing genuinely new and creative things with it. The fact that the device itself is software driven has obviously helped that process but some of the hacks we've seen have amazed us all."

Which begs the question, will studios be impressed enough by what they see from the Kinect hacking community to adopt some of the techniques for their own titles? Perhaps the scene will do the unthinkable and take things full circle, influencing mainstream game design.

"I bet it already has," suggests Blake. "Figuring out how to make these interactions work is a very hard problem. If you look at the first wave of Kinect games, there are couple aspects of the menus and interactions that don't work well and a couple that work really well."

With the OpenKinect community experimenting and innovating with many new and different types of interactions, it doesn't matter that not everything they conceive will work in reality. In ironing out the kinks, and test the boundaries of possibility, Kinect hackers are doing much of the work for traditional games developers, and all in plain sight.

"I'm sure that mainstream game designers who are working on the next wave of Kinect games have been watching the community closely and have already incorporated some new ideas into their games," says Blake.

"We ignore the gamers and enthusiasts at our peril," says Nash, confirming Blake's suspicion. "It's easier than it's been for decades for those at the grass roots level to get their hands dirty and create fun content for their favourite hardware, and we've always tried to listen to and engage with that indie community."

"It's much easier for them to break down gameplay conventions, and although we have other considerations or restrictions to



Right: The insides of Kinect provide hackers with vast quantities of invaluable data that can be interpreted in numerous ways

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Imagination



Left to right: Kinect visionaries Josh Blake (OpenKinect founder), Patrick Bouffard (UC Berkeley), Evan Suma and Mark Bolas (both University of Southern California), Garratt Gallagher (MIT), and John Nash (Blitz Games Studios)

contend with when we develop big-budget commercial games, I think it's inevitable that we'll see the mainstream influenced by some of this work."

THE INNER LIMITS

To paint too optimistic a picture, however, would be unrealistic. Kinect imposes numerous limitations on the hackers and academics that have embraced it. Patrick Bouffard, a researcher at the University of California, Berkeley's Electrical Engineering and Computer Sciences department, has adapted Kinect to provide the eyes for a quadrotor helicopter, which has captured the attention of the world's media. But it isn't just a cool flying robot. It serves as an experimental testbed for more theoretically oriented research in autonomous control systems.

Bouffard's creation, which uses Willow Garage's open source Robot Operating System, has also taught the researcher a thing or two about the challenges of working with Kinect.

"One thing is that the field of view is limited," he explains. "It isn't designed to give you a wraparound 3D view of the world. So if you only have a single Kinect onboard it's like your robot is flying around a darkened room and can only see what's in the beam of a flashlight that points forward. But limitations are also a good thing in the sense that they

drive advances. That particular limitation, for example, might motivate us to ask how we can make the quadrotor fly so it looks around itself in different directions, often enough so that it remains safe."

Another limitation also comes from one of Kinect's greatest strengths. As mentioned previously, the device produces lots of data.

"In terms of accuracy I've been impressed with how good the tracking can be, though it's still not going to measure up to the sophisticated mocap systems."

Evan Suma, USC

While providing a fantastic opportunity for those harnessing the power of Kinect, using all that data requires a lot of CPU cycles.

"It also is hard to separate the Kinect from the graphics engine and software," says Suma. "Speed and accuracy are always concerns. In terms of accuracy, I've been impressed with how good the tracking can be, though it's still not going to measure up to the sophisticated motion capture systems used by the film and

video game industries, which can get sub-millimetre precision. I hope that this will be improved in next-gen sensors."

There are also other areas where Kinect struggles that those familiar with its inner workings are tackling with software solutions; issues such as improving tracking of the parts of the body that the Kinect has trouble with, such as head orientation and arm twisting.

Suma and Bolas are tackling these very issues as they improve FFAST, a general-purpose toolkit that enables anyone to harness the potential of low cost body tracking, that, in the spirit of the community spirit that defines the Kinect hacking scene, is free. So far FFAST has been downloaded 40,000 times.

With figures like that, it's easy to imagine the Kinect hackers are starting a revolution. There's eight million of the game gadgets in the public domain, and some are already being used to operate surgical machinery, read sign language, guide robots, project art installations onto walls and control high-end creative software.

The potential is enormous, and considering the current rate of progress, in a few short years it could be possible that just about all of our interaction with technology takes place under the watchful eye of Kinect and its inevitable imitators. You might even be using it to interface with your game engine.

TOP 5 KINECT HACKS

Five of the finest Kinect hacks hand picked from the hundreds already out there



■ Kinect Drawable Synthesiser

Who: roboczar, MIT
What is it: A great hack that allows the user to draw shapes with an ordinary pen, which are then recognised through Kinect as interactive synthesiser keys. Ultimately it allows you to perform the Beverly Hills Cop theme with your fingers and a basic note pad.



■ Hollow Man

Who: Takayuki Fukatsu
What is it: An impressive optical camouflage program built with Kinect and Openframeworks. The trick behind the illusion, which apes the famous technology of the *Predator* movies, remains something of a mystery amidst those in the Kinect hacks community.



■ Body Dysmorphic Disorder

Who: flight404
What is it: A realtime three dimensional morphing effect that creates a rather creepy, utterly fascinating illusion. the Body Dysmorphic Disorder hack sees the bodies of all who pass in front of the connected Kinect cameras made massively oversized or underweight.



■ Sign Language Recognition

Who: Zahoor Zafrulla, Georgia Tech College of Computing
What is it: In developing a game for deaf children called *CopyCat*, Zafrulla and his team have achieved a staggering level of recognition of American sign language, demonstrating Kinect's huge potential for good.



■ PR2 Teleoperation

Who: Garratt Gallagher, MIT
What is it: Demonstrating one of the most high-end hacks yet seen, MIT's Kinect wizard Gallagher uses the Microsoft peripheral to teleoperate the futuristic PR2, using his own arms to guide the robot's multi-jointed limbs with quite remarkable precision.



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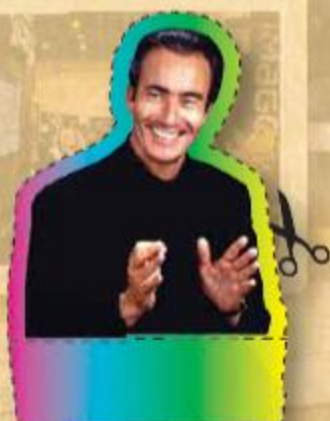
You left your conference pass in your hotel room! What an idiot. Go back to the start to retrieve it

The Red Bull you just necked to counteract your hangover worked a treat. Speed forward four spaces

Ugh, these aren't your comfy shoes for getting around quickly! Miss a turn

You sit in on a session before yours - It's a business track talk. Miss a turn sleeping

You sit in on a session before yours - it's an inspiring piece about polygons. Energised, you jump forward two spaces



You get distracted by buckets full of free branded sweets/stress squeezers/t-shirts. Miss a turn

START



When crossing the busy junction at Market St, you fall under a tram. Get dragged back one place

At the expo, you get mobbed by glad-handers. But you collect over 100 business cards. Networking win! Have another turn

You get lost in Moscone South, but you find a shortcut. Go forward two spaces*

You realise the title for your talk is a Tim Langdell registered trade mark. Miss a turn as you call your lawyer for advice

You spot into a charismatic, attractive Develop journalist looking for a quote. Miss a turn hiding under a breakout area table

FINISH

Congratulations! You made it to the podium and you deliver your keynote, flawlessly. Except – **LAST MINUTE GAME DESIGN COP OUT TWIST!** – you forgot your PowerPoint slides. Go back to the start, this time playing as a dark version of yourself. Ooh, edgy



You get lost in Moscone North, but that just puts you back out near the Metreon. Um. Go back two spaces*

You discover a discarded Segway from a local tour. Hop on and move forward a square so slowly you miss your next turn

Phew! It was all a dream! Hang on... On no! You've overslept. Back to the start

You accidentally glimpse right up the utility kilt of a conference associate. Stagger forward two spaces in total shock

*Oops. You've hit our game-breaking logic bug. You're lost in Moscone infinitely. We'll get better board game QA next time.

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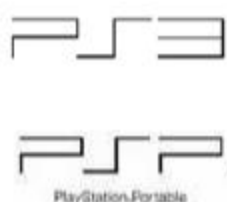
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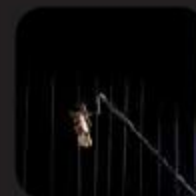
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Lost in Translation

QA and localisation are key components of a healthy development pipeline, but in a fragmenting industry their importance is sometimes forgotten. **Stuart Richardson** sat down with leading members of the sector to find out what is being done behind the scenes to ensure games reach consumers...

Digital distribution, open beta testing, increasingly uniform international release dates and DLC-as-standard have all significantly altered the way the development industry operates. For QA and localisation firms, this modern sector presents a myriad of challenges to navigate, both new and old.

Few have any doubt that these tribulations can be overcome, however.

"QA is now recognised as an extremely important, integral part of the development process," says Andy Robson, MD of the UK QA firm Testology.

"This is something that has developed over the past ten to 15 years, partly due to the ever expanding size of video games and the increasing depth of design. Maintaining quality is fundamental in a competitive market, so successful QA firms ensure, as best they can, a product's quality through the whole development process.

"The overall state of the QA sector is, therefore, healthy because of this recognition. QA processes have rarely changed, the same old methods are still being used to ensure quality. In my experience these processes may need slight adaptation sometimes, but still work to the level required."

That positive view is shared across the full international scope of the industry as well.

"The QA in games testing has improved over the years. There is a standardisation in the testing process that has followed," explains Gireendra Kasmalkar, MD and CEO of multinational testing firm SQS.

Despite this, it is common knowledge that things only ever get better when people don't accept the status quo. The ever-growing expectations of international games consumers continue to push the industry forward as well.

The time designated to QA is less than it should be. The end-users look for games that are bug-free, and even smaller publishers need to fix problems.

Gireendra Kasmalkar, SQS India

"The time designated to QA in games is less than it should be. The end-users look for games that are bug-free, and even smaller games publishers need to fix any problems before releasing," Kasmalkar continues.

"Games today are much bigger, more complex and technologically sophisticated, with gamers expecting almost real-life experiences. They correspondingly need much longer testing by more skilled testers to ensure that coverage is sufficient."

Within the localisation sector, a sensation of reaching a high plateau of appreciation is also spreading. That every silver lining comes with a cloud is not unnoticed either.

"I do believe that localisations are coming into their own with regards to appreciation and forethought within the game development space," says Stephanie Deming, president and co-founder of the US-based localisation company Xloc.

"Publishers and developers know the international market is important, and do attempt to simultaneously support and develop for their global community.

"MMOs and social networking games are making this even more relevant and imperative. Cost is still a rough spot. Publishers are willing to spend millions on game engines, but want localisations done on the cheap. The expertise and sophistication of internationalisation isn't necessarily inexpensive, so priorities need to be set."

PLEASE RELEASE ME

With international release dates reaching a stage of near-complete synchronisation on many triple-A projects, digital download titles and DLC, both QA and localisation firms have had to adapt their operational pipelines to an ever more globalised games market. Based on current performances, however, confidence is high.

"We feel that this is certainly not something that has had a negative effect on our operations," says Yan Cyr, president and CEO of Canadian QA and localisation company Enzyme Testing Labs.

"Actually the contrary is true, as we can benefit from knowledge sharing and synergies between the functionality and localisation testing teams. All of our resources are full time and we can accommodate simultaneous localisation in over 20 languages on multiple platforms if required."

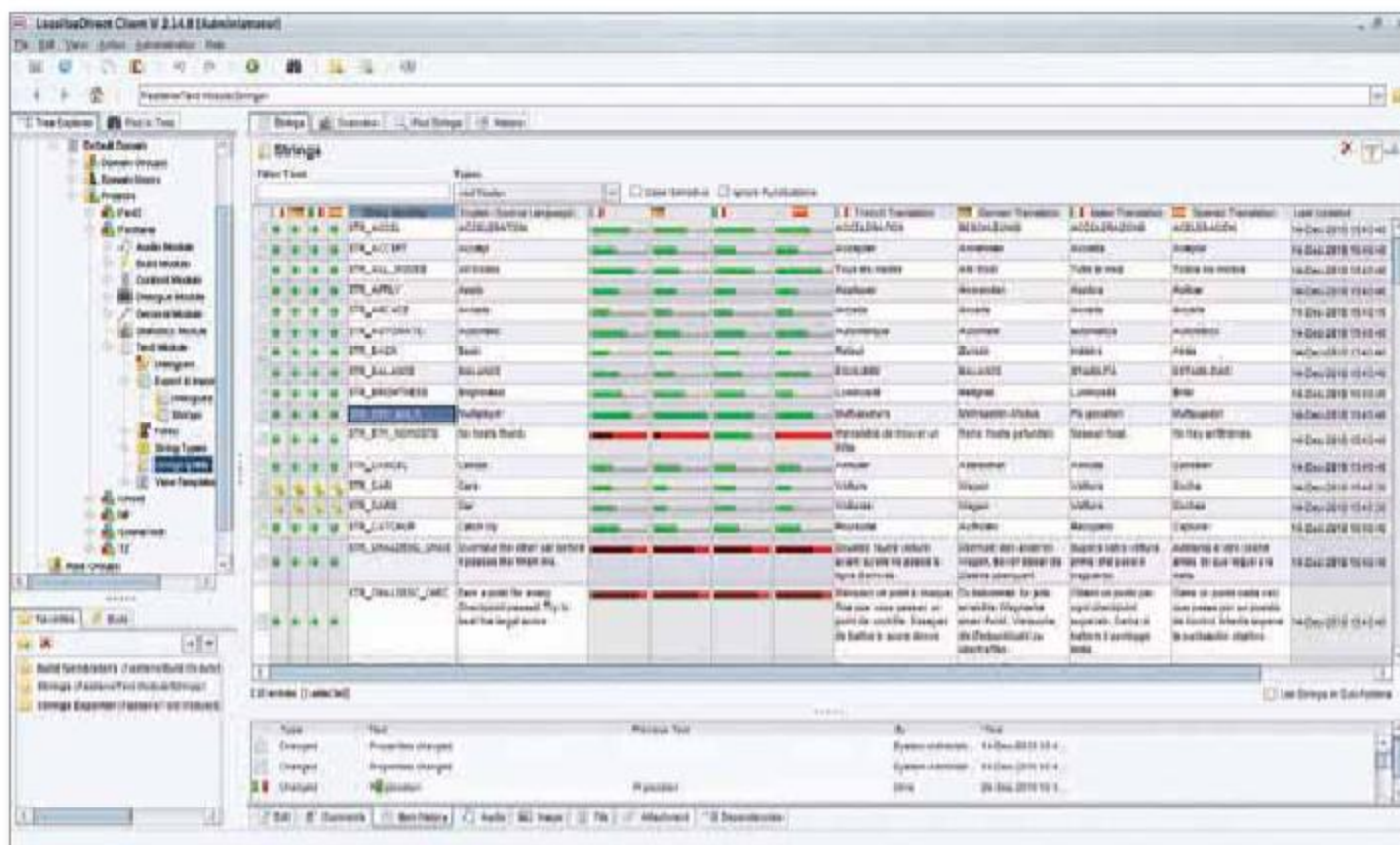
And if the new challenges presented by closing release dates have caused any major differences in the operation of QA firms, UK-based Playable Games manager Ben Weedon sees them as positive.

"We've been active in the industry since 1999, and our turnaround times have always needed to be as quick as possible," he says.

"We usually turn around the key findings and recommendations the day after testing completes. We can't get much quicker than that, so we've not noticed any change in client requirements.

"We're finding that companies see the value of it so much now that they factor extra time into the schedules. This means that they can do more rounds of user testing per title than before. So despite timescales shortening, user research has become much more of a necessity, and we're doing more work per title."





Above: Localize Direct's 'localisation content and dependency management system'



Below: The staff at Québec-based Enzyme Testing Labs



YOUR OWN GAME

From a strictly localisation-focused perspective, a need for adaptability is also met with a keen desire to meet industry changes head-on.

"The people we work with day-to-day are the localisation project managers of our clients. It's their job that becomes increasingly difficult due to 'same day shipping,'" explains Richard van der Giessen, president and founder of the Dutch localisation firm U-Trax.

"It's very difficult for them to keep track of the sometimes endless last minute changes to the in-game texts and original English voice recordings of their projects. Some of them need to take care of several triple-A projects at the same time, for which they need to arrange localisation in maybe 15 languages. There is always a risk projects will get very chaotic."

"This predicament won't change any time soon. What we do is to let our project managers support the client's LPM's and take as much work off their shoulders as possible. The fact that we are a multilingual service really helps. One email with their files and Q&As and the like and that's five to eight more languages sorted. Acting as a filter saves a lot of time."

Paul Vigneron, testing manager at Dublin-

based localisation firm Keywords International, is also familiar with working quickly through the new challenges that worldwide release date synchronisations are liable to present.

"Localisation and QA require great levels of operational scalability and flexibility, especially in multi-region, simship scenarios. Finding the right partners and coordinating collaborative efforts become vital to allow for heavy workload fluctuations to be appropriately controlled," he explains.

"From our point of view, this type of superimposition gives localisers and QA teams a great opportunity to work together

“Management of so many titles can be a heavy burden. It's crucial for game companies to have a high quality, organised localisation system.”

Stephanie Deming, Xloc

across languages to create fantastic—and consistent—localised versions that players everywhere can enjoy.

"Translating a game after the original is mastered up is easier, yes, but giving localisers the chance to work on a living, breathing, and growing title can also help inspire artistic thought and creative solutions to problems."

LOCAL HERO

As games development processes morph to keep pace with the demands of digital platforms, people throughout the QA and localisation sectors gain engaging insights on the video games industry as a whole.

"The best thing about this job is the excitement surrounding new projects," says Olivier Deslandes, head of localisation at the London production services company Side.



THE BETA BAND

WITH OPEN beta testing becoming an ever more frequent method of testing PC titles pre-release, yet more considerations must be made as to the way in with outsourcing is handled – QA outsourcing in particular.

"It's had a positive effect on QA," says Testology boss Andy Robson.

"With more expansive worlds and multiplayer modes offering access to large amounts of players, it has become a necessary part of the QA process. With the increased numbers of users, useful issues arise that wouldn't be found until release."

"Some of these issues relate to the limited numbers of dedicated testers, as a result of budget and time. It allows the community to contribute to the process and aid with the amount of mass coverage conducted on increasingly large titles."

U-Trax president Richard van der Giessen agrees with Robson's outlook.

"I don't think open beta will have a negative effect on either localisation or QA," he says.

"Don't forget, in our work we don't even know what the next hour will bring us during the peak period. So being a good Loc and QA service provider to our clients means always being prepared for what you perhaps expect the least."

"If you can't stand that heat, don't even think of getting in the kitchen."

Through into the localisation sector, Xloc's Stephanie Deming shares the belief that nothing bad will come of the changing shape of games development.

"We don't see too much difference in the open beta process, other than potential last minute modifications to the text or assets to localise, all under the premise of making the game better and more fun," she says.

"Using Xloc, however, provides our clients with the ability to make very last-minute changes and get those changes in-game quickly and efficiently."



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Campaign AI Programmer
Senior Graphics Programmer
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Game UI Artist



From left to right: Silvia Ferrero (MediaLoc), Stephanie Deming (Xloc), Mike Souto (Localize Direct), Andy Robson (Testology), Gireendra Kasmalkar (SQS India) and Yan Cyr (Enzyme)

"But the worst is the constant pressure associated with unrealistic deadlines. In terms of outsourcing, I can see translation becoming more and more an in-house process. However, I think audio localisation can only remain outsourced due to specific requirements; project management, foreign version post production and specialist skills like localised rewrites and casting – all required for each project."

Mike Souto, business development director at Swedish company Localize Direct, sees expanding the roles and uses of outsourcing in the future as the most obvious and easily available route to streamlining development processes as a whole.

"There has been a massive increase in self-publishing developers but they still require a lot of skills that cannot be sourced or maintained at their studio," he says.

"The cost of keeping in-house QA and translation teams just isn't possible for the

smaller company. Outsourcing these demands as well as other development and publishing requirements is the way forward for these guys. Diversity is what makes this sector great.

"We can work with a large scale developer one day and then a two-man team the next. It's quite an enviable position. The work required is always different but when you deliver improvement to any process that's

"The cost of keeping in-house QA and translation teams just isn't possible for the smaller company. Outsourcing these demands is the way forward."

Mike Souto, Localize Direct

extremely rewarding. Love localisation, embrace it. Don't leave it until the end, or it'll sneak up and slap you in the face."

Testology's Robson outlines a similar passion for outsourcing in general, relating it back to the QA work of his firm in particular.

"QA offers a great way into the industry. It allows passionate individuals from all backgrounds an opportunity to pursue a passion as a career," he says.

"Not only does QA offer great career opportunities, but it can help shape skill-sets and developmental understanding that can be transferred to other roles. QA is the eyes of the consumer. Its main focus is to ensure that the very best product is released. As passionate gamers, the opportunity to influence the quality and success of a product is highly rewarding."

Amaud Messenger, operations manager at localisation firm Testronic, is equally positive about the ongoing role of outsourcing.

"The need for outsourced translation will always be there," he says.

"With localisation it will always be essential to companies that don't have an internal QA to have their titles tested. When dealing with bigger titles it can be critical to ramp up the size of the testing team during later development stages.

"QA service providers can provide experienced teams at short notice which prohibits the need for developers to maintain large internal QA departments.

"Outsourcing plays a relevant and vital role and will continue to do so."

WHERE NEXT?

NOBODY EXPECTS that the challenges facing the international video games development industry in the next few years will be anything less than comparable, if not more complex than, those of the past few years. It would be remiss to expect the QA and localisation industries to do anything less than rise to them. Many in the industry are already expecting them.

"In terms of translation, the games localisation sector is still one of the most exciting areas to work in, mainly due to the great deal of creativity that it requires on the part of the translator," says MediaLoc director and translator Silvia Ferrero.

"There is no denying that translating games is fun. It is also encouraging to see what a big role localisation plays in the industry, constantly increasing sales across the territories.

"However, there is a lot of pressure and secretiveness in the industry. Localisation vendors are continuously faced with unrealistic deadlines and insufficient information about the project. Although admittedly the situation has improved a lot in the past few years, dev teams still need to be more aware of what the localisation process entails and its difficulties and challenges, so that they can provide better support and understanding."

Ferrero remains certain of the direction that can be taken to avoid any possible difficulties, however.

"Despite the fragmentation in the industry, I believe that outsourcing still plays a very important role in localisation and will continue to do so.

"It allows developers to cut down on costs, as opposed to having permanent staff in their offices, and leaves the work to the experts who will look after the project and liaise with the client to ensure the best possible results."

Side head of localisation Olivier Deslandes retains a keen problem-solving intention as well.

"I think the industry is going through a period of major consolidation, with a proliferation of more independent budget titles, far fewer of the 'medium budget' titles, and a much smaller number of triple-A titles," he says.

"There's going to be more focus on the few triple-A titles going out, and they'll need to deliver across all languages, not just in original language versions."



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UNCHARTED'S

As the development process of *Uncharted 3* gathers pace **Will Freeman** catches up with Naughty Dog co-president Evan Wells to find out what the studio is doing to take narrative deeper into the realm of gameplay...



Above: Naughty Dog co-president Evan Wells discusses the challenges in taking the latest in the *Uncharted* franchise to the next level

Naughty Dog has always championed the intertwining narrative and gameplay. How do you approach this evergreen design challenge, and how have you innovated the concept in *Uncharted 3*?

It's probably one of the hardest things that we do. It means that we have to maintain a lot of flexibility in both the game design and the story and keep revising each as the game is coming together to make sure that we're getting it right. We start with a loose plan and as things start to take shape we see where we need to adjust to make sure that the pace of the game is matching the emotional beats of the narrative.

And it's a two way street. They both can influence each other. One change on *Uncharted 3* that is going to allow us to do an even better job is the fact that we now have our own motion capture studio on a sound stage not too far from our office, and we even set up a mini stage right inside of Naughty Dog. This means that we'll get to work even more with our actors and put more motion capture into the game.

And what was the biggest challenge faced in intertwining narrative and form in *Uncharted 3*?

The biggest challenge is managing all of the dependencies. We have to work in a loose fashion, making as much concrete progress

as we can in our level design and our art production as the back and forth happens with the gameplay and the narrative. As the interweaving solidifies, we try to minimise the amount of rework that our designers and artists have to do in order for everything to feel integrated. It's impossible to eliminate it entirely, so the whole team has to be invested in the importance of getting it right since it means that many people have to revisit assets that may have been close to complete.

“I think we've shown that consumers are looking for a richer narrative experience. It's one of the selling points of the last two *Uncharted* titles.”

Evan Wells, Naughty Dog

Consumers have long been wowed by graphical flair. Can narrative experience today be used to woo the public in much the same way?

We sure hope so since we're putting so many resources behind our narrative. But I think that we've shown that consumers are

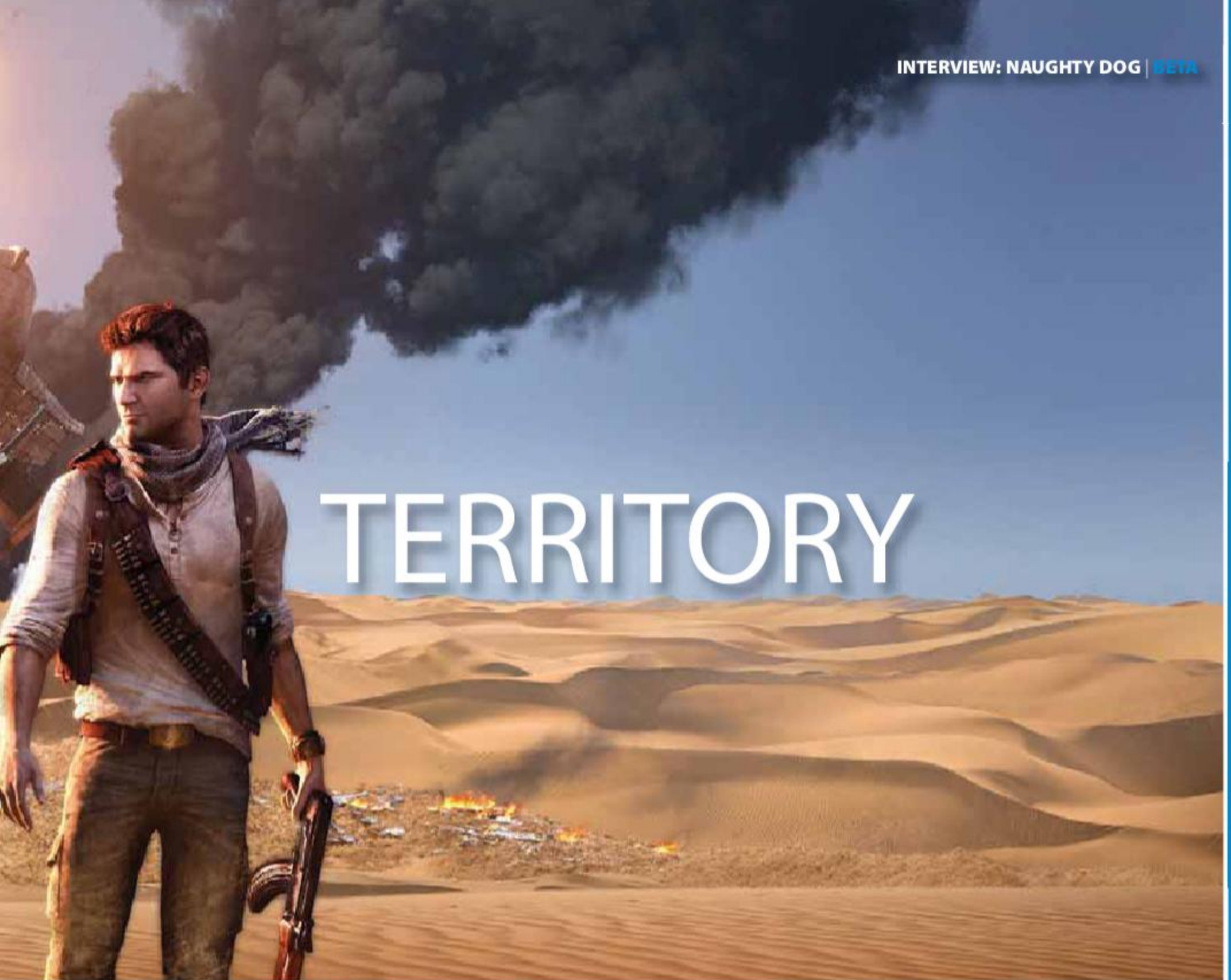
absolutely looking for a richer narrative experience. It certainly is one of the selling points of the last two *Uncharted* games, which have been met with both a solid consumer and critical response. Too many games are focusing solely on graphics, or visceral spectacle, which are important, but can be given so much more meaning if infused with emotional context.

On the subject of visual spectacle, was there any way in which you managed to harness the stereoscopic 3D compatibility to better or adapt the narrative experience?

We're still early in development and relatively early on in specifically working with 3D technology. During our next year of development, we will be exploring various ways we can leverage 3D to add to the *Uncharted 3* experience. On the flip side, the quality of the narrative in our games is paramount – ensuring the story meets the high standard of quality we come to expect from ourselves is of the highest priority.

You've already mentioned motion capture. How important is choosing the right performers for *Uncharted 3*? There seems to be a real comparison with the work of a film maker or television director.

It's been said time and again that casting is everything, and we couldn't agree more. If



you have the right actors working together that have a strong chemistry, they will elevate the project beyond your expectations. No amount of brilliant writing or directing is going to overcome poor acting, or a cast that aren't getting along on the set.

We take our casting very seriously and treat the process exactly as they do in film and television. We see dozens of actors for each part and have them read through multiple scenes over the course of several call backs. We have them read with Nolan North (Nathan Drake) to make sure that there's a connection and we hold our auditions on our

“ We take our casting very seriously and treat the process exactly as they do in film and television. We see dozens of actors for each part. ”

Evan Wells, Naughty Dog

mocap stage so they can get a feel for what it will be like on a shoot day.

And once we have our cast and we're ready to start production, the day before every shoot we bring the actors in for a table read and a rehearsal. This is a chance for the actors to bring their ideas to the table and we adjust the dialogue with them to make it sound more natural. On the actual shoot day, we rehearse a few more times before shooting, and take our time and don't try to capture too many scenes so the actors don't feel rushed.

The desert setting of Uncharted 3 has tested the Naughty Dog team, but “everyone latched onto the wealth of opportunities that it provided,” says studio co-president Evan Wells



The desert setting presents an interesting challenge from a gameplay design context. Why did you choose a premise that will surely test the Naughty Dog team?

It was actually the very first thing that we decided on for the project. Everybody immediately latched onto the wealth of opportunities that it provided in just about every department. We knew that it would visually stand out from what we had focused on in our previous games – such as jungle and snow.

It would give the programming staff some great challenges in rendering shifting, pouring, piling, and blowing sand, and the game designers could dig into the rich history and architecture of the Middle East as well as all of the tropes of the action adventure genre that take place in this setting.



Uncharted 3's windswept environments will also play host to a significant multiplayer overhaul

How important is multiplayer to *Uncharted 3*, and how have you managed to tie multiplayer in with the feeling of a narrative experience?

Multiplayer is a huge emphasis for us on *Uncharted 3*. We want to expand on everything that we did on *Uncharted 2* and add to it all the features that the best online experiences out there have and then some.

Another thing we really want to leverage is the uniqueness of our move set that allows players to climb and traverse their environment like no other game out there.

Finally we are going to bring the cinematic set piece moments you get from the single player experience and bring them into our online modes.

By the time *Uncharted 3* is released, many of your staff will have presumably worked solidly on the franchise for six years. How

do you inspire your team under such circumstances, and stop people becoming uninspired or desensitised?

That's obviously a very important issue that we tackle in a number of ways. The biggest thing we do is continue to challenge ourselves. We constantly push the technology so that everyone can attempt new things with our engine that nobody has ever seen before. The whole team at Naughty Dog loves wrestling with technical problems and then coming up with creative solutions. Which is why the *Uncharted* franchise is such a rich universe to play in. We can let Nate travel to the far corners of the world to tackle just about any kind of environment imaginable and delve into historic architecture that keeps the team inspired.

On a similar note, how have you approached the creative challenge of

keeping the series feeling fresh without straying too far from the character that defines it as an *Uncharted* game?

Like I was just saying, it's pretty easy to do in the *Uncharted* universe since there are so many ancient civilizations to tap into which span the entire globe. But the thing that we can rely on to keep things the most fresh is the story. Since the characters and their relationships are such a huge part of what defines *Uncharted*, the action that's taking place is really just an excuse or a setting for the story that's being told.

Drake is more complicated than your typical one dimensional game hero, and by introducing new characters, or diving deeper into the relationships of past characters, you get to see new facets of what makes him tick.

If we get that side of things right, the multiplayer, and technology we should be in good shape.





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Multicultural Thinking

As the games industry becomes increasingly global, doing business across cultural boundaries is an increasingly important skill. **Sylvain Liège** of software development consultancy Liemur offers some insight...



Above: Liemur's Sylvain Liège. Right: A representation showing the importance of understanding culture in business

We all know that games development has gone global. This globalism is in line with the trend of developing offshore, in less expensive or more competent countries, creating in fine a multicultural project.

In places like London, you'll find people from all over the world in the same workplace. At first, this multicultural approach may seem to present real cost efficiencies, but what is the real price we pay?

Team human dynamics are a complex issue and looking at the outsourcing savings alone can prove to be a false economy.

Unfortunately, this little gremlin will only show himself late in the project, costing ridiculously high amounts of money.

We all know that if you are British and work with a Japanese, Indian or French contact, the nature of the relationship might be more or less fluid and smooth. As Richard Lewis, one of Britain's foremost linguists and author of *When Cultures Collide* summarises it: "A working knowledge of the basic traits of other cultures (as well as our own) will minimise unpleasant surprises (culture shock), give us insights in advance, and enable us to interact successfully with nationalities with whom we previously had difficulty."

So what does it mean to be British, American, French, German, and so on? Several definitions of culture have been provided and we will retain the definition given by Geert Hofstede, a Dutch social psychologist who did a pioneering study of cultures across modern nations: Culture is the unwritten book with rules of the social game that is passed on to newcomers by its members, nesting itself in their minds. In other words, it is the sum of all the rules you have learned when you were a child without necessarily knowing you were learning them. It is important to note that no culture is better than another, they are just different.

CULTURAL DIMENSIONS

Most authors who have worked on this question have identified several 'dimensions'. The general idea about cultural dimensions is that human beings have been confronted by the same problems all around the world. What makes them different is the answers they have assigned to these challenges. Understanding these, and the answers given, is the key to a better relationship. Let's illustrate this point with an example.

One of the earliest authors working on the structure of culture is Edward T. Hall, an American anthropologist best known for his work in intercultural relations and communication. Among other dimensions, Hall identifies the concept of rich or poor context in the language we use. A rich context would correspond roughly to a lot of assumptions made when we communicate. A

poor context would reiterate what is 'already known' in order to remain clear and unambiguous. For instance, Latin countries like Spain are using more of a rich context in communication while Germans will use a poor context. Make them work together and it is likely that they will despise each other's way of writing a report or running a meeting.

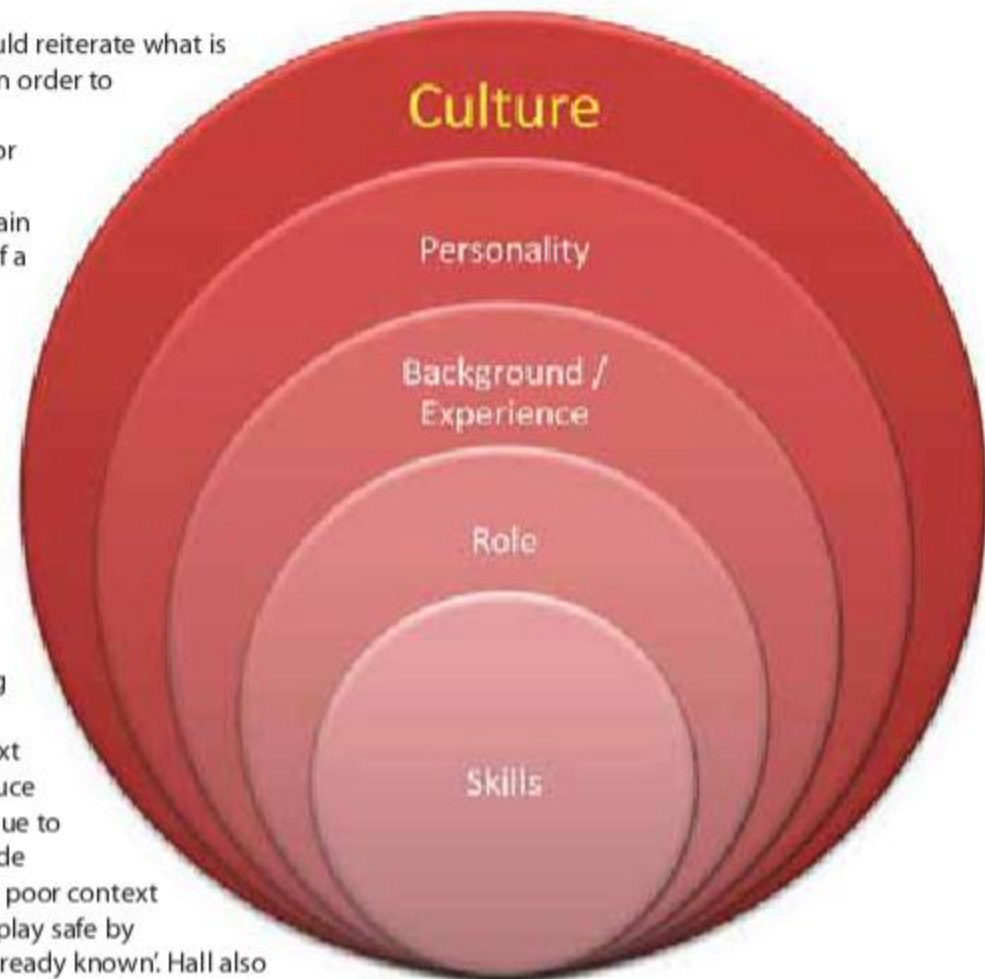
The rich context worker will produce shorter reports due to assumptions made compared to the poor context worker who will play safe by reiterating the 'already known'. Hall also identifies the concept of culture monochronic and polychronic. To simplify, a monochronic culture tends to do one thing at a time when a polychronic culture tends to do more than one. Put a polychronic worker in collaboration with a monochronic and it won't be long before they declare that it is impossible to work together. The polychronic worker will declare the monochronic worker as a mono-maniac where the monochronic worker will believe his polychronic colleague is unfocused.

“ Studying cultures can help you to create better games, with a wider global appeal, whilst improving your development team's efficiency. ”

Sylvain Liège, Liemur

Have you ever felt that you couldn't understand the work pattern of a colleague? Has it brought you to the conclusion that, "you just can't work with these 'blank' "? (Replace 'blank' with the country you can't understand) Well, here you are, it might well be the first key to your problem.

The games industry is by nature a very international one and without due consideration the cultural backgrounds of staff can be a project killer. Unfortunately,



judging colleagues is what we do instinctively. Regrettably, being judged is also what we personally dislike most. It can create very strong negative reactions that most of the time will never be shared in the open. This can be killing your projects slowly, including the ones with the best people.

A THEORY OF FUN

Building a fruitful relationship with someone comes in two stages. Firstly, study and know your own culture in the first place and then secondly, investigate what makes your team mate different. Always keep in mind that the global issue will be about 'normality', not about what is right or wrong – that's judging again. This normality will be very different depending on what you have been taught was 'normal' as a child and experienced in your community.

Seminars, workshops and special team building events are key elements to the success of your international projects.

Finally, be aware that these cultures' specifics actually have the potential to kill your project twice – once during the development of the game, and once again when it goes on sale. We all know that a proportion of games do not work worldwide. It is likely that cultures have something to do with it. Do we believe that Raph Koster's definition of 'fun' once applied will have one and only one version in the world? Studying cultures can help you to create better games, with a wider global appeal, whilst improving your development team's efficiency.

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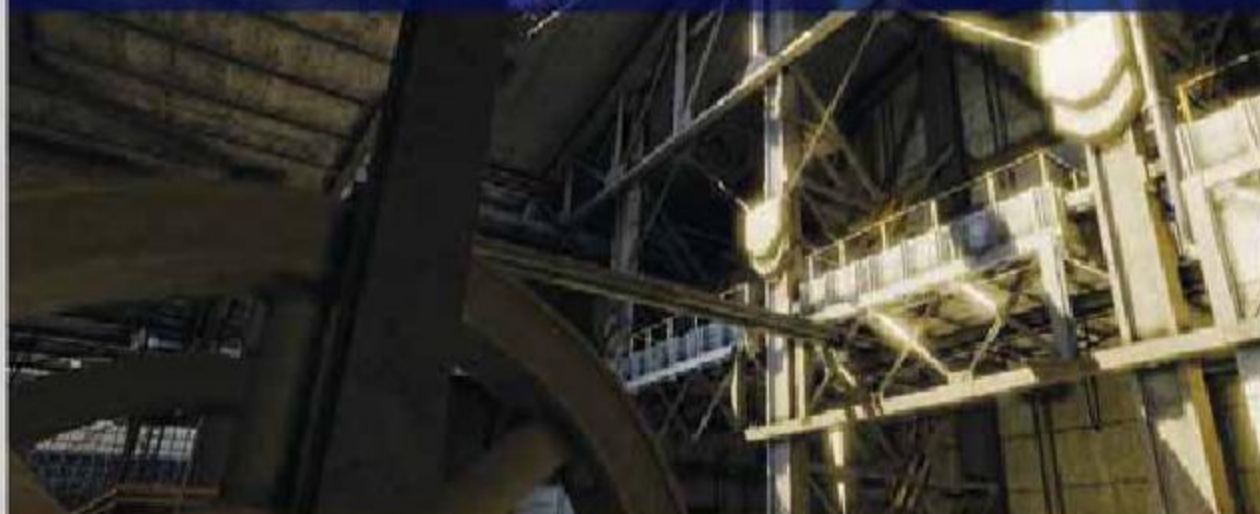
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BUILD

THE LATEST TOOLS NEWS, TECH UPDATES & TUTORIALS

**"Just play it really quietly.
Ready? Go."
Dead Space 2's composer, p65**

**SPOTLIGHT:
Shogun 2's
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**TUTORIAL:
Morpheme 3
in Enslaved**

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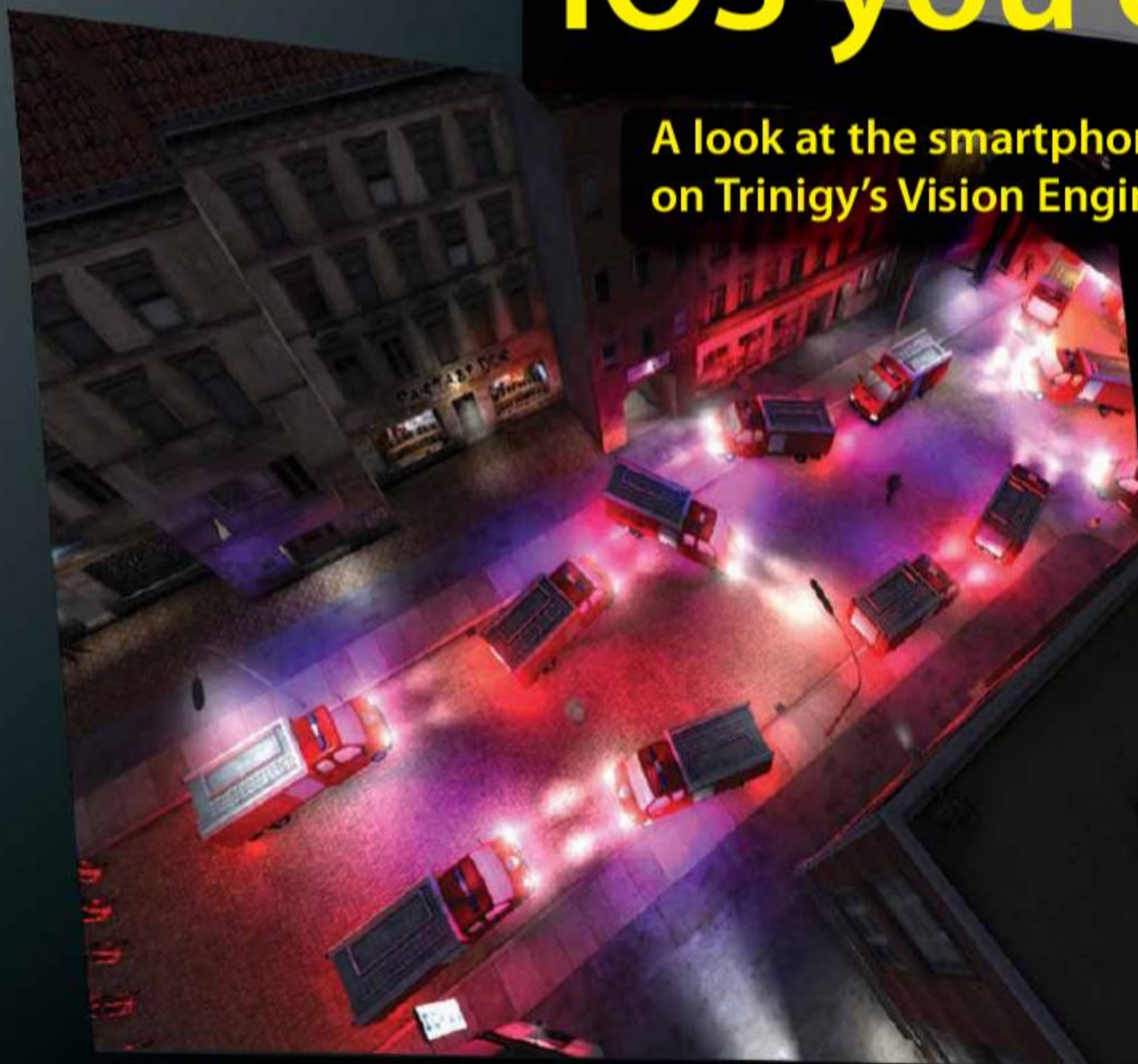
**KEY RELEASE:
Sundog
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iOS you can

**A look at the smartphone support
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EPIC DIARIES: THE RETURN OF JAZZ JACKRABBIT, p63

Vision Engine 8 showcasing dynamic lights in deferred shading

Apple in its eye

Tool company Trinigy has just revealed that its Vision Game Engine is now supporting iOS. **Will Freeman** asks the firm's general manager Felix Roeken why he has embraced Apple's platforms, and what else is in store for the engine...



Above: Trinigy's general manager Felix Roeken

PRODUCT: Vision Game Engine
COMPANY: Trinigy
SPECIALITY: Game engine
CONTACT: Via web
www.trinigy.net

What is Trinigy showing this year at GDC?

First off, we're really excited to support the iOS platform with the Vision Engine. Enabling developers to create graphically rich, high-performance games for handhelds such as the iPhone and iPad will be a huge focus of ours in the coming months. We already have a prototype of our iOS version running, which we will be showing at our booth (1810) by appointment only.

We also have a major update to the Vision Game Engine, which includes a large number of highly requested features, such as the RakNet bundle, the FMOD bundle, a new shadow rendering system including support for tetrahedron-based soft shadow maps, various additions to both our forward and deferred rendering systems, new special effects such as geometry particles, many workflow improvements and much more. We'll be demoing that update on the floor in our GDC booth.

And last but not least, we're working on a huge bit of news that we're really excited about, but which we can't announce until the show; so stay tuned.

Supporting iOS is a significant move. What motivated Trinigy to embrace iOS with the Vision Game Engine?

The core philosophy behind our technology is to provide developers with unlimited development freedom. One way we give

developers that freedom is by supporting as many platforms out-of-the-box as we can. We're now supporting PC, all of the major consoles, and most browsers. iOS is clearly one of the leading platforms for handheld games, so the move to iOS was a logical step in our development roadmap.

And what will the Vision Game Engine for iOS offer developers that makes the technology stand out from its contemporaries? A number of other high-profile engines now support the platform.

In keeping with our core philosophy, the Vision Game Engine is far more modular and open, which makes it super easy to extend and modify. Our game engine has never

“We believe our customers are our partners and that supporting them requires more than forums and emails.”

been a one-size-fits-all solution. If developers want to leverage any third party middleware or add in some of their own tools and pipelines, they can easily do so.

Secondly, it is highly optimised for each platform. Any time we extend the Vision Game Engine to support another platform, we go to great lengths to ensure that it maximises the unique hardware and

operating system resources of that platform. iOS will be no different.

Thirdly, we strongly believe that our customers are our partners, and that when they're in the midst of production, supporting them requires more than forums and emails. Our iOS customers will enjoy that same level of individual support.

Does Vision for iOS offer developers ways to distribute their games on the platform and optimise discoverability? Perhaps you have plans to do so?

That is something we're currently looking at, but do not have anything concrete to share at this point.

What about the challenges you faced in moving to support iOS?

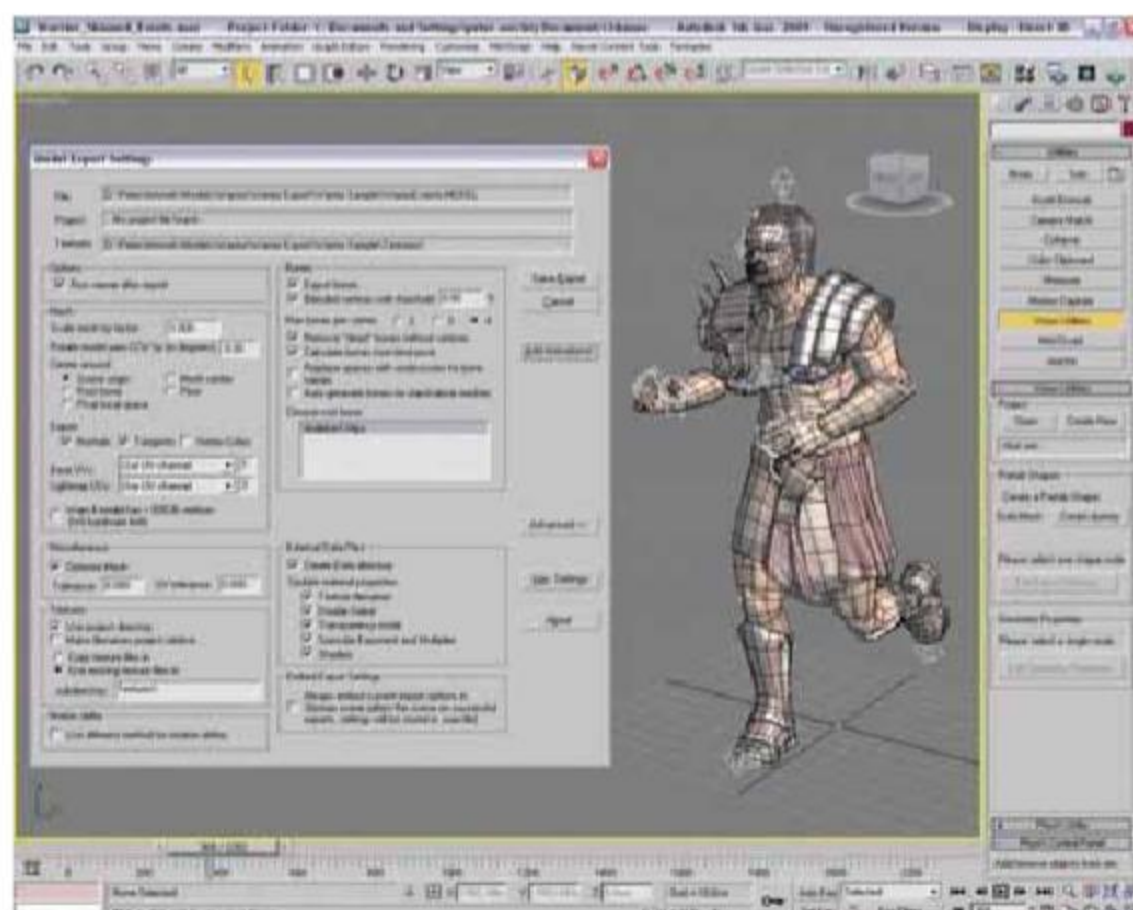
Technically, our goal is to enable developers to maximise the hardware resources of iPhone and iPads in order to pack the most punch in a game. At the same time, our credo is that our customers can utilise the Vision Game Engine for all platforms, leveraging basically the same source and asset base.

That, of course, has its challenges, but those are not insurmountable. Since the Vision Game Engine has a lean, optimised core, is extremely scalable, and already supports a very broad range of hardware platforms including Nintendo Wii, there is quite a lot we can do to enhance the iOS gaming experience, even with the limited shader performance of the current generation iOS platforms.

From a marketing perspective, supporting mobile devices does come with some



Above: Trinigy's engine can support a fully dynamic day and night cycle



Above: The Vision Engine 8's SDK provides developers with what promises to be an intuitive workflow

business challenges for middleware providers, which Trinigy has been considering carefully.

Some competitors have gone to a cheap – or free – per-seat price in the short term. Others have opted for a straight royalty model, which represents an unpredictable expense variable for developers in the longer run. The Vision Game Engine has historically carried a very fair and straightforward pricing model for a feature-rich technology capable

of supporting the development of such a wide range of games. We have been thoroughly looking at a number of options for Vision's iOS market and plan to unveil more details at GDC.

How important is tech integration to Trinigy's future roadmap?

This strategy is a direct extension of our philosophy of development freedom, and represents a new way of thinking about

middleware. Ultimately, middleware solutions and internal toolsets are not just stand-alone products – they are parts of a unique development ecosystem that should work seamlessly together to streamline the development process. The modularity and flexibility of the Vision Game Engine embodies that concept.

It allows development teams to easily integrate their own internal toolsets, or to use many other commercial packages on the market. We currently support 20 third-party integrations with leading middleware products, with more planned.

In the case of FMOD and RakNet, it's important to note that these were more than just technical integrations – they were bundles. So when developers purchase the Vision Engine, they actually get the full FMOD and RakNet solutions for all platforms with it. That not only allows developers to create their own unique solutions – it gives them three complete and leading middleware solutions for the price of one. Not a bad deal.

Looking to the forthcoming handheld gaming platforms from Sony and Nintendo, do you have any plans to support NGP or 3DS?

We are currently looking at both 3DS and NGP. As handhelds will be a core focus of ours in 2011 and beyond, we haven't ruled out supporting either of them.

NGP looks especially intriguing, and really strikes me as a great platform for the hardcore gamers who want to have an immersive PlayStation 3 experience on a handheld device.

www.trinigy.net

KEY RELEASE

Will Freeman eyes Sundog's sky rendering tech SilverLining

WHAT IS IT?: A C++ library for real-time sky and cloud rendering
COMPANY: Sundog Software
PRICE: \$2,500 single app royalty free license (see web) www.sundog-soft.com



Above: SilverLining 2.11 allows users to render highly realistic clouds and other atmospheric elements

FOR THOSE unfamiliar with Sundog Software's SilverLining software, the clue is in the name. It is a renderer of the sky, clouds, and just about everything else that makes up a planet's atmosphere.

Conceived – of course – to deliver photorealistic results, SilverLining has just undergone a maintenance overhaul in the form of its new 2.11 update, and according to its creators, the benefits for the technology's users will be numerous.

As well as ironing out some bugs and providing improved support for round-earth coordinate systems, SilverLining 2.11 also updates to latest DirectX SDK, and changes the way custom random number generators are handled.

REACH FOR THE SKY

Where SilverLining is really gaining ground, however, is with its increasing number of integrations with high-profile game engines.

"We're always looking at providing integrations and support for new game engines that are gaining in popularity and are extensible," says Sundog founder Frank Kane. "A new integration is in the works right now – but I can't say with who yet. Already we integrate with Ogre3D, OpenSceneGraph, and Gamebryo Lightspeed – which remains popular in the Far East – and we've built SilverLining in such a way that it can drop in easily to any engine built on top of DirectX or OpenGL."

Recognising many studios will continue to want to use their own proprietary rendering technologies, Sundog has also endeavoured to expose all the hooks to

its low-level rendering calls so they can be wired into any new engines as they emerge.

"We're also taking advantage of emerging capabilities on modern graphics hardware," reveals Kane.

"Our 2.0 release featured a new type of cloud based on GPU ray-casting, which allows us to render really thick, dense cloud

"We're always looking at providing integrations and support for new game engines that are gaining in popularity and are extensible."

Frank Kane, Sundog Software

layers that look great and render fast on modern hardware. We've also got support built in for DirectX 11 and high dynamic range rendering."

And for Kane, it doesn't end with the 2.11 update, as Sundog prepares a host of new features. "We still have a few tricks up our sleeves for making further improvements to the quality and performance of the clouds we render with GPU ray-casting that will be rolling out later in the year," reveals Kane.

"We'll continue to stay on top of supporting new technologies, compilers, and rendering engines as they emerge."

For Sundog's customers, it really does seem that the sky's the limit.



HEAD IN THE CLOUDS?



AS HIGHLY specialised middleware goes, you don't get much more acutely tailored solutions than Sundog's SilverLining. But do developers really need something specifically for rendering accurately behaving cumulus clouds?

"It's just a huge time-saver, and we've tried to price it such that it's a no-brainer for any game that features expansive, outdoor scenes," says Sundog founder Frank Kane.

For that reason, Sundog Software's offering has proved especially popular with MMORPGs and flight sims. To say that implementing physically-based skies and 3D volumetric clouds that look convincing is no trivial task is an understatement. Even for those studios uninterested in conveying physical reality, SilverLining promises to save a lot of artist man hours.

"There's no need to model and position individual clouds or create skyboxes if you're using SilverLining," confirms Kane.

"You just give it a time, location, and weather conditions to simulate, and the rest happens automatically."



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We'll open again with **Evolve** on 19 July, exploring everything new in game development. Then the main conference continues on 20 and 21 including Games:EDU and the Audio day. Plus, there's the Expo, the Industry Excellence Awards and a myriad of other networking events and parties to keep you busy...



I really enjoyed the spirit of looking forward I found at Evolve. So many conferences are about products or processes that are directly in front of us. Evolve seemed refreshingly focused on the trends that define our business.
Louis Castle, co-founder of Westwood Studios



Develop is a fantastic conference which grows in importance and scope every year. It's my favourite conference in the UK where our industry really comes together in one place to exchange ideas and truly examine what is good and what we could improve in our business.
Nick Burton, Rare



I was blown away with the amount of support that the UK games industry showed attending this great event. It was a fantastic conference, and I had a chance to meet some top notch game developers from the UK and beyond. I will definitely be attending next year!
Adam Boyes, Beefy Media



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EPIC DIARIES

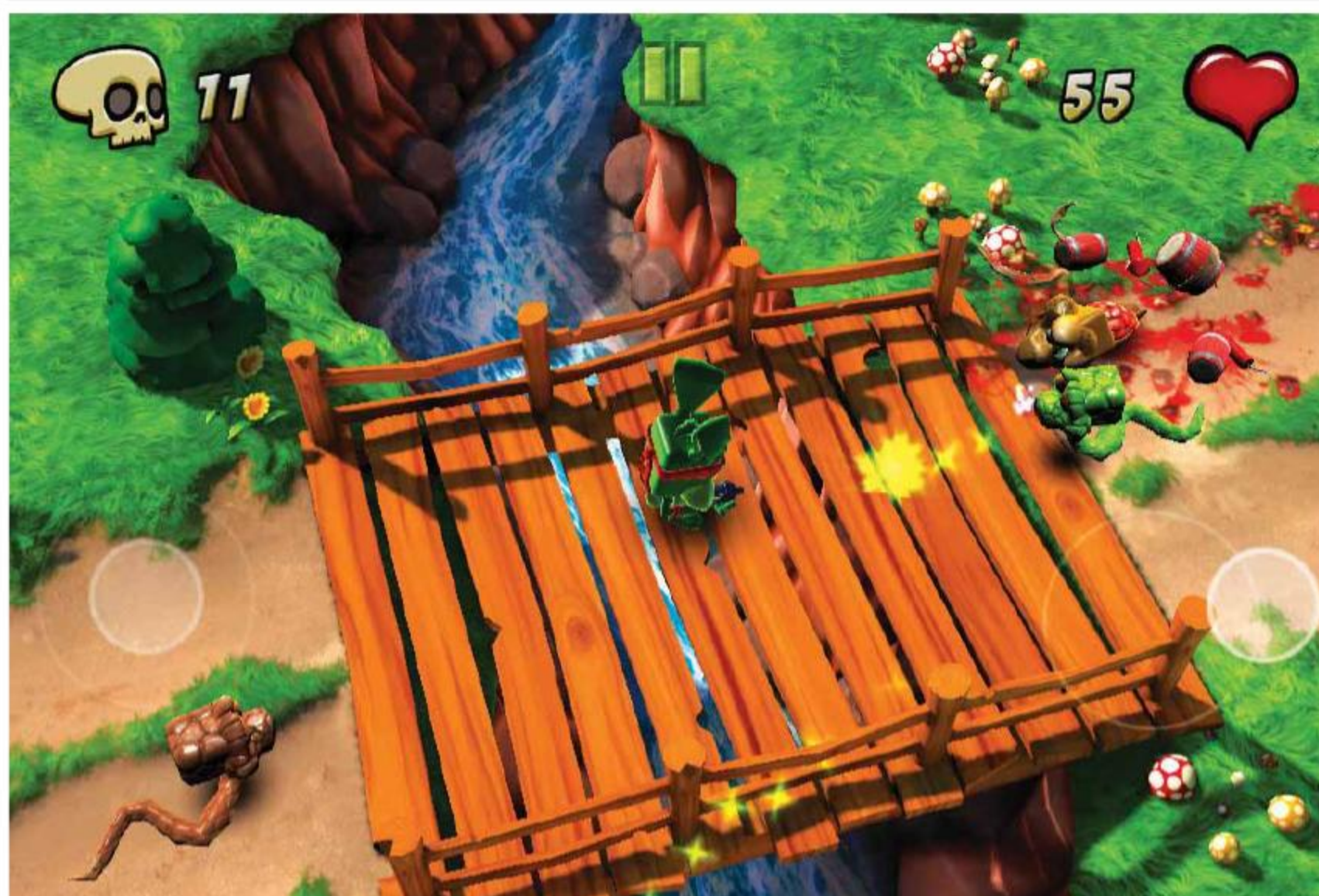
A look at Unreal Engine 3's support for the new wave of mobile gaming

Unreal Engine 3 and UDK on mobile

Developer: Epic

Released: Out now

www.unrealtechnology.com



Left: Jazz Jackrabbit is back, via a new tutorial for Epic's Unreal engine

ANYONE LOOKING for proof that Unreal Engine 3 is ready for the world of mobile game development got their answer in December 2010. Epic and ChAIR Entertainment's own *Infinity Blade* created a major stir the moment it was released for the iPhone, iPad and iPod touch for a simple reason: it showed that mobile gaming is ready for console-quality graphics and game play.

Upon release, *Infinity Blade* shot to the top of the iTunes App Store charts around the world. *IGN* named it the best iPhone game of the year. It won *TouchGen's* Best Action Game, Best Graphics and Game of the Year honours along with many other awards. The game's first free update has already shipped adding in-app purchases to the mix, and more features, including multi-player, which is on the way.

THE NEW WAVE

The floodgates have been opened for a new phase of game development for mobile devices. Not only has *Infinity Blade* shown that mobile devices can support high-fidelity graphics, it's also proved that there's a large market of mobile users whose trigger fingers have been itching for quality mobile games.

Infinity Blade isn't the only UE3-powered mobile game making a splash. Trendy Entertainment's *Dungeon Defenders: The First*

Wave is the first UDK-powered game to debut on Android as well as the iOS devices.

"Developing mobile games with Unreal technology allowed our small team, with no prior experience on mobile platforms, to produce several titles in just a handful of months – just in time for the holiday season," says development director Jeremy Stieglitz.

"Unreal's combination of robust tools, seamless art-driven pipelines, and powerful graphics has given our team the power to create high-end games which clearly stand out from the crowd."

And that's just the beginning. Plenty of developers are using the Unreal Development Kit for free to test the waters of mobile gaming, now that it's clear they won't have to compromise to go mobile.

ALL THAT JAZZ

"UDK for mobile development brings the power of Unreal Engine 3 to virtually anyone, allowing them to realise their own game ideas, and make them come to life on their own mobile devices," states Epic's Shane Caudle. "Now with UDK, anyone can be a game developer and sell their games on Apple's highly successful App store."

Caudle created a tutorial to demonstrate how to use UDK to prototype an iOS game using the visual scripting language Unreal

Kismet without touching code. If nothing else, it's worth watching just to see Jazz Jackrabbit in action again – Jazz starred in one of the first games Epic ever made, back in 1994. In the tutorial, the game is designed to be a top-down dual-stick shooter. "This Jazz tutorial is just a simple example of how quickly you can get something fun up and running without having to write any code, due to the power of Kismet," explains Caudle.

Finally, it's GDC time. If you're interested in using Unreal Engine 3, let's talk at GDC this year. Whether you're making a game for console, PC or mobile, you should see our latest tools and technologies in action. Contact us at licensing@epicgames.com with several day and time combinations that suit your schedule.

UPCOMING EPIC ATTENDED EVENTS:



DICE Summit

Las Vegas
February 9th – 11th, 2011

GDC

San Francisco
February 28th – March 4th, 2011

Please email: mrein@epicgames.com for appointments.

To discuss anything raised in this column or general licensing opportunities for Epic Games' Unreal engine, contact: mrein@epicgames.com

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Canadian-born **Mark Rein** is vice president and co-founder of Epic Games based in Cary, North Carolina. Epic's Unreal Engine 3 has won Game Developer magazine's Best Engine Front Line Award four times along with entry into the Hall of Fame. UE3 has won three consecutive Develop Industry Excellence Awards. Epic is the creator of mega-hit "Unreal" series of games and the blockbuster "Gears of War" franchise. Follow @MarkRein on Twitter.

UNITY FOCUS

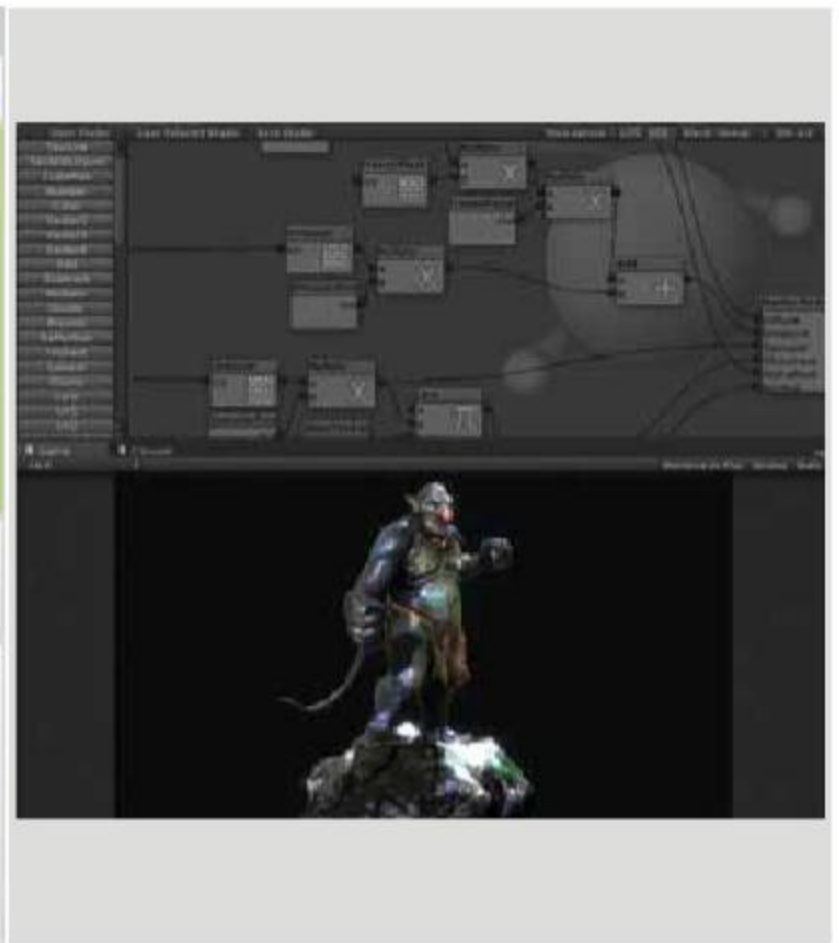
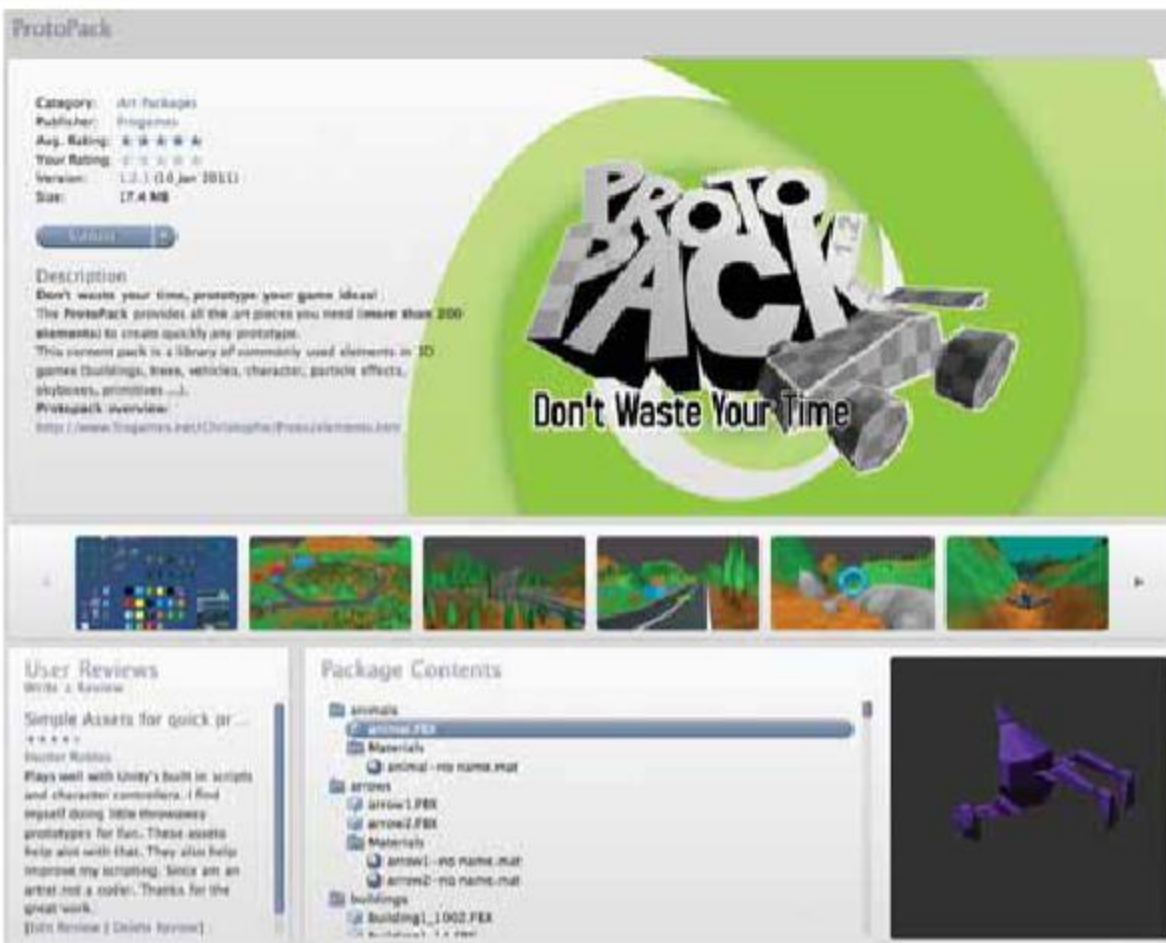
Will Freeman looks at how the Asset Store is shaping up

ASSET STORE

Developer: Unity

Platforms: Various

What is it: An in-engine marketplace
www.unity3d.com



Above (top-to-bottom): Unity's Keli Hlodversson, Frogames' Christophe Canon, and Cryptic Studios' Kurt Loeffler

WHEN UNITY unveiled its Asset Store back in November last year, it was easy to feel optimistic. The tech outfit's in-engine marketplace for buying and selling assets and Unity extensions aligned elegantly with the company's vision of democratised game development, and promised to harness the potential of the communal industry.

But now the store is up and running what is the reality of providing assets, and can it really make those who do money?

"It makes my work easy," says an optimistic Christophe Canon, co-founder and CEO of Frogames. "I've created assets for indie game developers since 2006, and the main difficulty is to manage to find an audience to sell my products."

"The Asset Store plugs me directly to this audience, because the store is inside the software. In addition to this, new products arrive everyday, and that makes Unity's Asset Store more and more attractive to lots of indie developers."

IN THE MONEY?

According to Canon, who has succeeded as the top-grossing provider of Asset Store content thus far, with the number of Unity users and the quantity of products in the marketplace growing every day, there is good reason to be upbeat about potential revenues. And he's not alone.

Kurt Loeffler is an environment artist at Cryptic Studios, and is enjoying enough success on the Asset Store to consider providing content to other Unity users full time. He remains pragmatic about the potential the marketplace offers him, but is certain the Asset Store can serve as a launch pad for a change in career.

"Currently I don't make enough money from it to quit my day job," he admits, adding:

"But maybe if I add some more stuff I could. I would like to work for myself and I think the Asset Store is a big stepping-stone to being able to do that."

SUPERMARKET SWEEP

According to those behind the Asset Store, the potential it offers sellers is rooted in the advantages its buyers enjoy.

Quality content, extensions and reusable game code are all currently available on the Asset Store, and are proving attractive to small teams unable to match man hours with creative drive.

The Asset Store allows studios an additional revenue stream, as they monetise their creations by repackaging parts of their projects.

Keli Hlodversson, Unity

"It also allows studios an additional revenue stream, as they monetise their creations by repackaging parts of their projects and tools and then sell them as reusable components on the Asset Store," says Keli Hlodversson, Asset Store development manager.

"What makes the Asset Store unique is that it is built straight into Unity," he adds. "Having the Asset Store constantly ready at hand allows developers to search for, buy, and

download game assets without ever leaving the Unity editor and the project they are working on. It's akin to having a supermarket in your kitchen. This opens a direct conduit for those selling assets to reach every developer using Unity."

What to sell



The options the Asset Store provides its users is a real, strength, but with so many choices available there is a small problem. With the chance to provide art packs, single assets,

tutorials, and a wealth of other items, just what should you sell to meet with success?

"We're finding that a very popular new genre on the Asset Store is in-editor extensions," reveals Asset Store content manager Caitlyn Meeks-Ferragallo (above). "Many people do not realise how incredible extensible Unity is through editor classes."

"Consequently we're finding that developers are actually starting to complement the UI and development environment with the features they want."

While Unity does its best to provide its customers with the functionality they ask for in feature requests, Meeks-Ferragallo admits that sometimes editor extension developers beat them to it: "A great example of this is the Editor++ extension, which extends copy, paste and many other features, and Shaderfusion which provides a node-based shader editor."

HEARD ABOUT

John Broomhall talks to BAFTA award-winning composer, Jason Graves

DEAD SPACE 2

Developer: Visceral Games

Release Date: Out now

Platform: PC, PS3, Xbox 360, Smartphone

www.visceralgames.com



DEAD SPACE 2'S score will not disappoint – that's assuming, like the rest of the original *Dead Space*'s fan-base, you'd like another dose of spine-tingling, nerve-crunching madness – courtesy of Mr Jason Graves.

But if his music conjures this thoughtful composer as a super-scary, black leather-coated devil-worshipper in your imagination, think again. Graves comes across as a well-grounded, personable ambassador for the art of game music – a man with bags of passion and creativity who, whilst highly delighted about the success of the franchise's music, confesses it was something of a surprise.

ORCHESTRAL MANOEUVRES IN THE DARK

"I'd never done anything like *Dead Space* before, with all those aleatoric orchestral effects, so I knew it was different; especially when I was heading to the recording with a full orchestra for two days and nobody had heard a note of music," admits Graves.

"You can't 'mock-up' 60 string players tapping their fingernails on their soundboards. EA wanted me to create the scariest music ever heard in film, TV or games, but I wondered if it was simply too out there, too dissonant.

"I figured it was so abstract and obscure, it would float under the radar without garnering much attention. Ironically, it was those qualities that got it noticed. I knew the overall audio was good, but when the music got so much recognition I was pretty shocked."

Following such a tour-de-force, *Dead Space 2* was inevitably likely to have something of the 'difficult second album' about it – as Graves confirms: "I had learned a lot. The first game was one giant test. I had no idea if I could pull it off. The end result worked wonderfully well in the game, but I knew there were things I could do better."

Meanwhile, the bar couldn't have been set higher for myself on *Dead Space 2*, so I had three months of pre-game jitters during the planning process. How am I going to make this better, but not too different?"

Time proved an important factor for Graves, whose ideal development scenario is always to be involved as early as possible.

"The game is simultaneously the most daunting and immersive experience I've ever had. It needs to be done right."

Jason Graves

"For a composer, perspective is hugely important. It's difficult to have proper perspective if you're doing sixty minutes of music in five weeks with the deadline looming," he says.

"Having that perspective and being able to review against the original score from the first *Dead Space* was vital. About a third way through I got into a rhythm – a confident feeling that what I was doing sounded like *Dead Space*, but also sounded new. And with the improved recording and mixing I had implemented, everything was more punchy and 'in your face'. Once I established the vibe and 'rules', it was just a matter of working on assignments as they came in."

UNKNOWN ENTITIES

For Graves, the orchestral recording sessions, via which he harvests huge amounts of unorthodox sampled weirdness for later use

in the production, are undoubted highlights:

"I would sit around for weeks, figuring out crazy ways of playing instruments so they wouldn't sound familiar. The unknown is perhaps the scariest thing you can experience, so I was trying to convey that musically by having all these instruments make sounds you don't recognise. It's mysterious; it puts you on edge. I brainstorm them, classify them and make a recording plan for lots of performance variations – loud, soft, high, low, etcetera.

"Then I go conduct the orchestra, which is a blast. It's the most fun part of the whole job. I've got 60 string players sitting there and I say, 'Okay everyone, pick up the dowels on your music stands and tap the back of the chair in front of you really quietly.'

"We do all kinds of stuff, like having everyone breathe really deeply, inhale and exhale. One of my favourite effects is when I told all 60 string players to play any note. Of course, ten people shove their hands in the air. 'I don't need you to ask questions – just play any note. I don't care if it's low or high, just play it really quietly. Ready? Go!'

"It's like the most beautiful, yet disturbing jazz chord you've ever heard in your life – magical. I take the ten to fifteen hours of recordings back to my studio, sort through them and prepare it all for potential use in the score. It's simultaneously the most daunting and immersive music experience I've ever had. I don't know – maybe I overdo it; but I feel like it needs to be done right."



Graves at work on the score in his studio



John Broomhall is an independent Audio Director, Consultant & Content Provider.
E: develop@johnbroomhall.co.uk
www.johnbroomhall.co.uk

DEAD END THRILLS

In the latest in his series, Duncan Harris takes a look at MMORPG TERA from Bluehole Studios...



Tera: The Exiled Realm Of Arborea

It's full of the things you'd expect after years of the Korean MMORPG: fantasy landscapes bursting with colour and fauna, bosoms bursting from impractical armour, and every so often a strange waddling tumour-type-thing just plain bursting on the end of a lance. It's probably best, though, to avoid the word 'lineage' when it's around.

The subject of one of the costliest court decisions in MMO history, *Tera* is very much the game that *Lineage III* could have been – because that's the game it was. When key members of NCsoft left to pursue their own interests, they took *Lineage III* source code with them and made it the foundation of *Project S1*, part of a new wave of Korean MMOs to use technologies and pipelines closer to the average triple-A action game. It didn't go unnoticed. The ensuing legal action, as much concerned with disclosure of

Lineage III secrets to potential investors, earned a 2bn Won fine (almost \$2m).

Few expected a rosy future for the fruits of that crime, yet here it is as not just the most sumptuous and arresting MMO in history, but one of the boldest and most successful users of Unreal Engine 3. Turning every conceivable terrain type into a gratuitous spectacle, it turns entire continents into seamless, freely explorable open worlds.

Tools and tricks for this screenshot: access to the game's Korean Open Beta, restored Unreal Engine debug and screenshot commands, and offline animation freezing.

www.deadendthrills.com

Dead End Thrills is a website and resource dedicated to the art of videogames. Its galleries feature over 5,500 bespoke screenshots which are free to download and use.

Developer: Bluehole Studio
Publisher: Frogster
Released: 2011
Capture format: PC



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A DAY IN THE LIFE: THE CREATIVE ASSEMBLY

A technical director at The Creative Assembly, **Richard Broadhurst** has been working on games for over 30 years. It's a remarkable achievement, considering what he tackles on just one day...



Above: Creative Assembly technical director Richard Broadhurst

AS THE technical director at The Creative Assembly, I have been programming – mostly in video games – since 1979. Recently I have been helping with the graphics optimisation work on *Total War: Shogun 2*. The following is an overview of a single day of development on the latest *Total War* title.

Total War: Shogun 2 has a completely new deferred renderer with DX11 support added and many rendering system changes. With all the new features, we were left to optimise the new systems for all of our existing customers using DX9.

Movie playback performance in the front-end was poor on lower-end PCs, but fine when played outside of the game. After the usual driver and movie player SDK version checks, I fired up the Intel Graphics Performance Analyser (Intel GPA).

ON THE BLOCK

When running a GFX analyser, I check the total GPU time matches the frame-rate to ensure that what I am looking for is likely to be a GPU issue. In the GPU breakdown (see above right) I have grabbed a frame and added parts of the scene rendered by each of the larger GPU duration blocks. The movie

was actually being played by code designed to play a movie in a window as part of the UI. This is typical of a fairly common mistake made in the industry and it wasn't a problem until a very expensive 3D battlefield was added into the mix as a front-end backdrop.

“*Shogun 2 has a new renderer with DX 11 support. With the new features we had to optimise the new systems for existing customers using DX 9.*”

Richard Broadhurst,
Creative Assembly

With the 3D scene turned off during full-screen movie playback, all the movies now play well on all machines.

When thousands of trees were being displayed on the campaign map, there was a noticeable slow down. Again, after checking

driver version and GPU timing, I started the investigation. Looking at the [trees] graph, you can see that the trees take quite a time: it is spent mostly in the pixel shader.

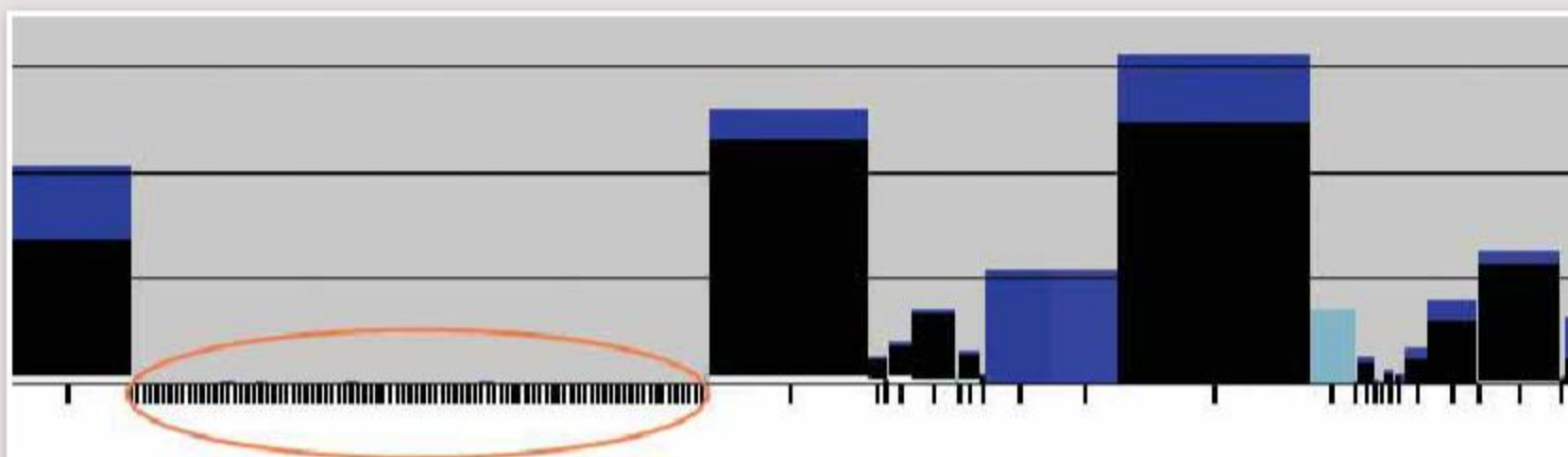
KNOCK ON WOOD

While looking at the pixel shader disassembly, I found that there were four texkill instructions. This was a very expensive instruction on the older hardware and can still be an issue on the more modern cards. I used the analyser to comment out all the texkill instructions – introduced as part of the DX11 deferred renderer – and turn on alpha test instead.

This showed a 50 per cent speed-up on the test machine, and a range from 15 per cent to 35 per cent on other machines. This was not a particularly accurate test, but it was a good enough method to convince the GFX team to then tweak the shader. As non-imposter trees are liable to cause an overdraw issue, I then checked the overdraw for the scene in question and noted particularly high levels – and poly counts – on the trees. To amend this, while the shaders were being changed, the art team remodelled the trees with fewer polygons and overdraw while still avoiding



Left-to-right: Render to G-Buffer, lights and lighting applied, and render full-screen movie and black bars (where the shaded area is clear)



The circled area represents the time taken to make 800+ draw calls to generate invisible Napoleon clouds that have been replaced with new Shogun 2 clouds.

imposters. The resulting trees looked just as good as the old ones, but reduced the GPU cost by 50 per cent.

ON CLOUD 800

The campaign map was still not performing in the way that we wanted it to, and a little further investigation (see above) into the issue showed 800-plus tiny draw calls. Looking at the pixels involved, the only possibility was clouds. I showed this to the GFX team lead, and he very quickly identified the *Napoleon: Total War* shader as the guilty code in this case.

It was both inappropriate for the *Shogun 2* campaign map, and redundant as *Shogun 2* clouds use a new system. With NTW clouds removed, the new performance was good: around 20+ FPS on one of our min-spec PCs.

When looking at the frame breakdown, I noticed that there was still a significant cost to the ground, and that parts of it were deep under the sea. In deep sea areas, the bottom does not affect the final render and these areas will be removed before shipping. With *Shogun 2*, we have many more coastal battles and these will also benefit from having the deep-sea bottom removing.

ON THE CARDS

As part of our standard preparations for release we send our game to GFX card manufacturers and they come back to us with compatibility and performance issues. We got a couple of issues back:

1. As part of the move to DX11, the use of half had been replaced with float, causing a performance penalty on some hardware. The

GFX team will reintroduce the use of half to some of the DX9 shaders to see if we get any benefit (the benefits may be reduced due to more texture usage than before).

2. An R32F format "depth" buffer was being used as part of the G-Buffer. This halves the performance of some cards, and we are looking at alternatives to improve the deferred renderer performance. As part of the work to support this, the GFX team were able to remove some z-buffer use and speed up other areas of the renderer.

The new water renderer is quite expensive on older hardware. We are currently at 20 fps on six-year-old-plus hardware, but still have some further optimisations to apply to support all the min-spec configurations we would like to before release in March.

www.creative-assembly.co.uk



SYNCHRONISING ENSLAVED

Martin Bunker, senior engine programmer at Ninja Theory, explains how he and his team synchronised characters in *Enslaved* using NaturalMotion's Morpheme 2 animation system...



Above: Ninja Theory senior engine programmer Martin Bunker

A major part of the gameplay in *Enslaved: Odyssey to the West* involves lead characters Monkey and Trip interacting with each other, and it was clear early on in development that we wanted perfect synchronisation between our two main protagonists.

Character synchronisation was not something Morpheme supported out of the box, so we worked with the support team at NaturalMotion to come up with a solution that met our requirements:

- We needed the synchronisation to be perfect in any individual frame
- It also needed to be blend seamlessly, over a small transition time, between synchronised and non-synchronised areas of the Morpheme network
- Finally, it had to be optimal, where possible

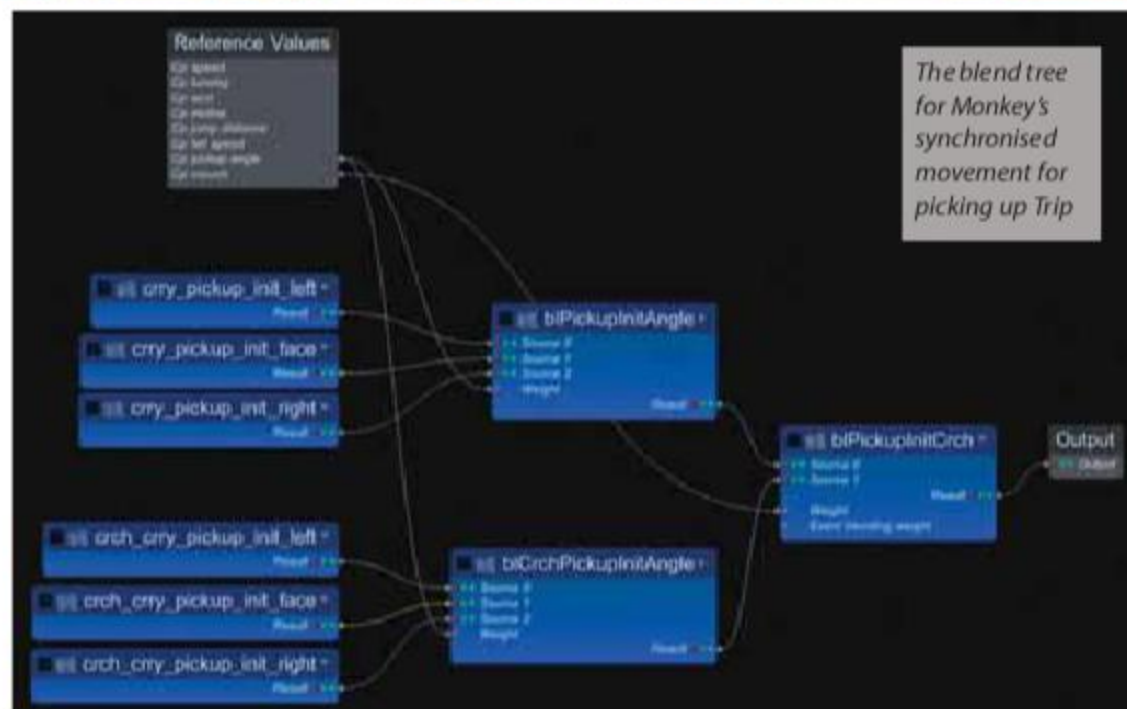
What we developed was a custom node for Morpheme that was called the Sync Node.

NETWORK AUTHORIZING

For two characters that were to be synchronised there was always a 'primary' and 'slave' character. Taking Monkey carrying Trip as an example, Monkey was in that case the primary as he was doing the carrying and actual player-controlled movement, while Trip was the slave character as she simply had to play the equivalent carried animations at the correct weights.

To achieve this, we author the primary character in Morpheme:connect as normal, but we put the area of the network that is to be synchronised inside its own state machine to encapsulate everything. In our example, this was a sub-network for Monkey's movement while carrying Trip.

For the slave character we place a single sync node inside an equivalent state machine in that character's network. We give this sync node the same name as the state machine on the primary character, allowing us to match up the state machine with the sync node.



Character synchronisation was not something Morpheme supported out of the box, so we worked with NaturalMotion to create a solution.

Martin Bunker, Ninja Theory

Having both networks' synchronised areas inside state machines allows us to blend to and from the synchronised areas of the network, thereby meeting our second requirement as well.

THE SYNC NODE

The sync node itself is a very simplistic node in terms of what it actually is and does. It is a node that has lots of inputs for animation nodes on it. For every animation node in the primary character's synchronised state machine there is the equivalent animation hooked up to the sync node in the slave

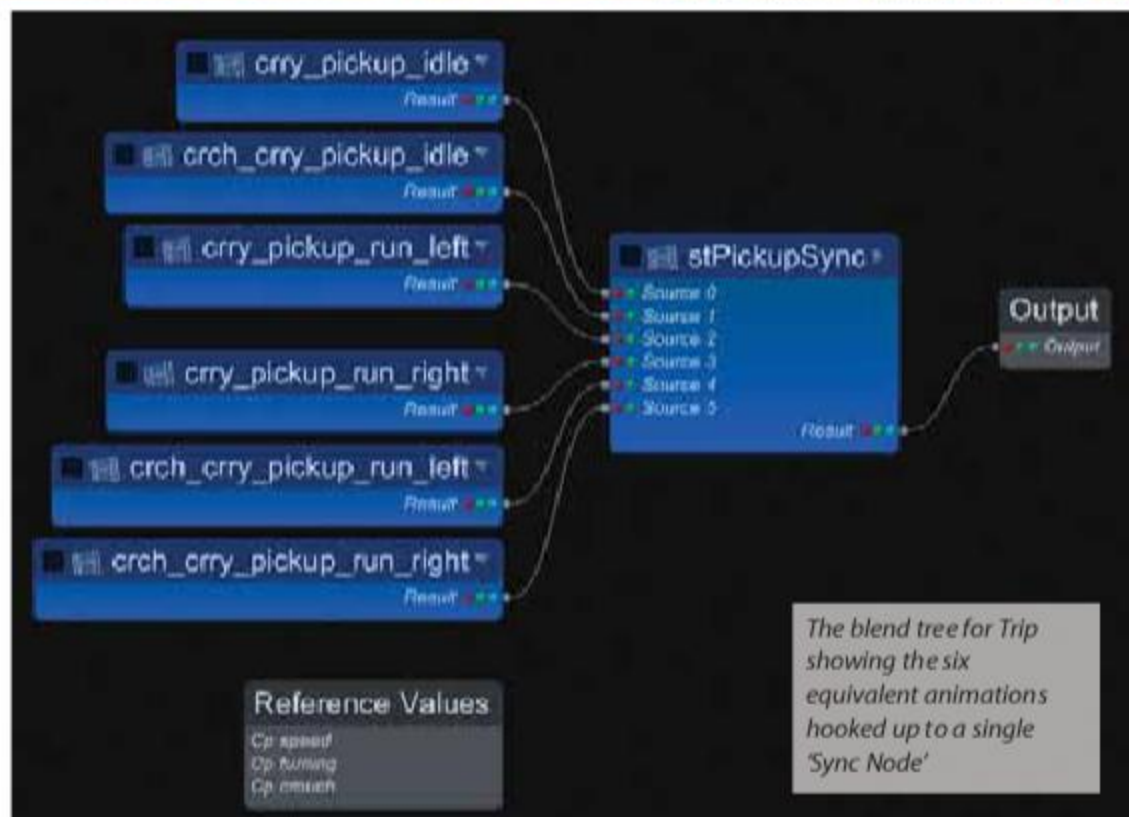
character's network. The names of the animation nodes hooked up the sync node match the names of the animation nodes of the primary, again so they can easily be matched up at runtime.

During runtime the sync node is told what animations to play, the time at which to evaluate each one and the blend weight for each animation. The sync node then kicks off a custom task that gets all the required animation inputs evaluated. The task then takes the resulting transform buffers from those evaluated animations and blends them together accordingly, resulting in a synchronised pose for the slave character.

IMPLEMENTATION

So how do we get those times and blend weights to the slave's sync node based on what the primary character is doing? There's a number of things that we have to do for it to all come together and work.

The first thing we have to do is get the two characters evaluated in the correct order. We need to evaluate the entirety of the primary character's network first, so that everything is up to date for when we extract the animation times and blend weights for the slave. The Morpheme integration with Unreal Engine 3



allows multiple networks to be evaluated in parallel using the PPU and SPUs on PS3, or multiple threads on Xbox 360. It does this by assigning networks to 'buckets', where networks in the same bucket will get evaluated on the same SPU, PPU or thread.

We therefore move the slave character into the same bucket as the primary character and make sure the slave comes after the primary in the array of networks to evaluate. This ensures the two synchronised characters are evaluated serially with the primary one done first, while maintaining parallel evaluation for the other characters. When we move the slave into the same bucket at the primary we can also choose to move another active character into the slave's original bucket for improved load balancing where appropriate. After synchronisation we move the slave character back to their original bucket and rebalance the other buckets.

When a Morpheme network is evaluated it generates lots of temporary data, such as the sample times for animation nodes, the blend weights for blend nodes, the percentages through transitions etcetera.

Synchronisation was a key part of the gameplay animation requirements and we are pleased with the solution that we arrived at.

Martin Bunker, Ninja Theory

For a lot of this temporary data it is deemed only relevant for a particular frame and deleted once the network has been evaluated. However, for the primary character, we need some of the data inside the synchronised sub-network so we can process it to work out the blend weights for the animations, as well as getting the sample times from the animation nodes.

To keep hold of this data, the Morpheme runtime provides a mechanism for registering

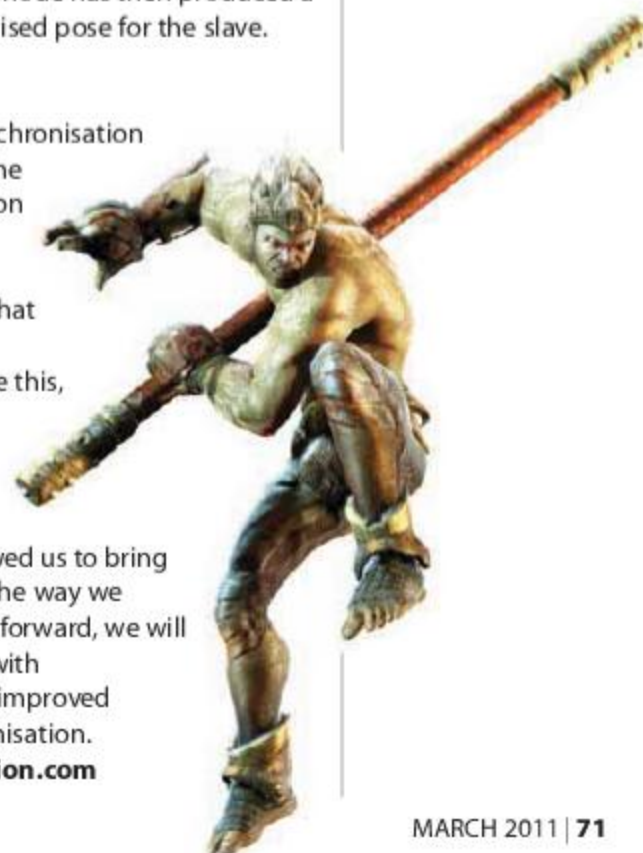
an interest in pieces of temporary data by saying we want access to that piece of data post-update. After the 'update connections' phase of the network evaluation has worked out the active tree of the network, a sync manager in the network goes through any active 'sync' state machines in its network and recursively goes down those branches of the active tree registering an interest in the relevant data. For example, if we encounter a blend node in the active tree we register an interest in its blend weight, or if we get to a leaf animation node we register an interest in its sample time.

After this, the primary network is evaluated and upon completion, we then process the sync state machines in the primary. For each active animation node below that state machine we get its sample time from the temporary data and store it. To work out the blend weights we start with a weight of 1.0 and perform a recursive walk through the sync state machine's children, splitting the weight accordingly if we encounter blend nodes or transitions (again, by reading the temporary data for a blend node's weight or a transition's percentage through). Once we reach an animation node we have the blend weight for that animation and store it. As an optimisation, we can cull animations from the list that have insignificant weights to avoid evaluating and blending them on the slave.

At this point the slave network begins evaluating. When the 'update connections' phase encounters the sync node, the sync node copies the stored animation times and blend weights from the primary and stores them as temporary data on itself. Then, as mentioned earlier, during evaluation the sync node's custom task gets all the required animations evaluated and blends them together. The sync node has then produced a perfectly synchronised pose for the slave.

IN SUMMARY

To summarise, synchronisation was a key part of the gameplay animation requirements and we were pleased with the solution that we arrived at. Customisations like this, as well as all the standard Morpheme features and functionality, allowed us to bring *Enslaved* to life in the way we envisioned. Going forward, we will continue to work with NaturalMotion on improved character synchronisation.
www.naturalmotion.com



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Game Performance Technology

PERSONNEL

This month: New faces at Playground Games, Foundation 9, Media Molecule and Intent Media

Julian House has been appointed international sales manager of **Intent Media's** games division.

He joined the UK publisher on February 1st and is now working across several leading brands at the company such as *MCV*, *MCV Awards*, *London Games Conference*, *Develop*, *Develop 100*, *Develop Awards*, *Games Media Awards*, *Sourcebook* and *CasualGaming.biz*.

House joins from Future Publishing, where he was recruitment account manager and then business development manager over a four year period at *Edge*. He has most recently been working within the outdoor and automotive sectors.

"Intent Media's games events, websites and magazines have an increasingly international appeal," said managing director Stuart Dinsey.

"Julian is well connected in the games business, bringing experience and energy. Our huge daily online readership across *MCV* and *Develop*, for example, gives us a massive opportunity within the recruitment space."

Intent specialises in websites, magazines and trade events for entertainment, technology and leisure markets. It boasts market leading brands within video games, toys, mobile content, home computing, licensing, musical instruments, professional audio and cycling.

If you are an organisation outside of the UK and wish to discuss how you can engage with Intent Media's extensive global print, online and events audience please contact Julian.house@intentmedia.co.uk.

Media Molecule has hired five people based on the strength of their online level creations for *LittleBigPlanet*.

The new staff have found themselves working at one of the most famous game studios in the world, and studio co-founder Kareem Ettouney said that the studio is open to hiring more.

He said Media Molecule's *LittleBigPlanet* levels were just as important as the level editor tools the team uses in-house.

www.mediamolecule.com



UK-based **Playground games** has three new staff members. Phil Cox (pictured right) is now a lead artist, Martin Craven (pictured centre right) a chief engineer and Ben Fell (pictured far right) a game designer.

Cox joins after 8 years at Codemasters, where he led the UI team on titles like BAFTA award-winning *Grid*.

"Phil has a superb eye for detail, great technical abilities and an expertise in user experience. He is already proving key in the development of our current project," said Playground director Gavin Raeburn.

Craven joins Playground after a decade at Codemasters, having held the post of lead programmer on *Dirt 2*. He will lead the engineering team on a day-to-day basis.

"Matt is a huge asset to playground," said Raeburn.

Fell also joins Playground from Codemasters having spent the past 10 years there in a number of different positions. He contributed to *Dirt 2* and 3, and *Formula One 2010*.

"Ben is a real talent from whom I expect great things - I'm delighted he has joined Playground," said design director Ralph Fulton.

www.playground-games.com



Foundation 9 has appointed Daniel Murray as its new director of business development.

Murray will be looked on to foster deals with potential publishing partners for the company. He joined the firm in 2006 and climbed through the studio ranks.

"This is a very exciting time to be at Foundation 9 Entertainment," he said.

"We've enjoyed long-standing and prolific relationships with the best game publishers in the world. It's my goal to continue to foster and build those relationships, leveraging the talent, multiplatform technical skills, and worldwide development resources of Foundation 9 to create great entertainment with those publishers."

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- Programmer
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www.creative-assembly.com

STUDIO SPOTLIGHT

This month: Stainless Games



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The Isle of Wight based studio Stainless Games was founded as Stainless Software back in 1993 by Patrick Buckland and designer Neil Barnden. For the first two years of its existence Stainless worked on a 3D engine with the now defunct Argonaut, and in developing multimedia medical titles for The Times Mirror Group.

Then, in 1995, Stainless took on a contract with Square Enix Europe – then still known as SCI – to develop a violent racing title called *Carmageddon*. Released two years later, the game entered the UK charts at number one and, amid a storm of moral indignation and fury in the mainstream media, garnered critical praise and massive sales the whole world over. This was followed up by Stainless with the *Splat Pack* expansion in the same year, and *Carmageddon II: Carpocalypse Now* in 1998, both to continuing praise and high sales.

In 1999 the studio became part of VIS Entertainment, and by 2001 Patrick Buckland had become executive director and design consultant on *State of Emergency*, published by Rockstar in 2002 to solid reviews and sales.

Stainless Games then broke off from VIS, headed up by Buckland and with support from Bullfrog founder Les Edgar. With the closure of VIS IOW in 2003, many of the original Stainless Software staff rejoined the firm, including co-founder Neil Barnden.

Since that reformation of sorts, Stainless Games has gone from strength to strength in the digital download sector.

Highlights of the studio's prolific output since the mid-noughties include bringing Buckland's own classic arcade title *Crystal Quest* to XBLA in 2006, obtaining a deal with Atari to redevelop several of its own arcade games for XBLA including *Missile Command* and *Tempest*, and XBLA and PSN board and card game remakes *Risk: Factions* and *Magic: The Gathering – Duel of the Planeswalkers*. The latter two titles and their content update packs



both granted Stainless a spate of XBLA download chart number ones.

With the third *Magic: The Gathering* expansion released in late December 2010, Stainless is set to build upon its successes for some time to come. 2011 is all set to be another very interesting year for the channel island studio with the big past.



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TOOLS NEWS

This month: Stonetrip, Trinigy, Allegorithmic and Havok

Engine vendor **Stonetrip** has signed a key partnership with Ideaworks Labs, expanding the range of platforms that Shiva3D developers can work on.

Ideaworks' Airplay SDK has been integrated with Stonetrip's flagship engine, meaning that Shiva3D developers can now port games to all Airplay supported platforms, from iOS, to Android, to Symbian, Windows Mobile and more.

Ideaworks Labs says that Shiva developers will be able to port its creations to further mobile platforms "with minimal extra effort".

Shiva3D already has native support for iPhone, Android and Palm webOS, yet the Ideaworks Labs deal means the tech will likely be more responsive to adapt to future mobile devices.

"It makes perfect sense for us to team up with Ideaworks Labs and to make Shiva3D more accessible to developers using Airplay SDK," said Stonetrip CEO Philip Belhassen.

"And it gives us new platforms as well, strengthening our position as the best integrated multi-platform engine on the market."



Stonetrip

Game engine provider **Trinigy** is to include cross-platform networking engine RakNet 4.0 with its Vision Engine for free.

As part of the deal, the Trinigy team has worked with Jenkins Software – the RakNet company – to co-develop an integration which promises to enable game developers to more efficiently implement advanced networking functionality in any type of game, on any platform, for free.

"With Jenkins Software, we have designed a solution that gives developers free access to RakNet's extensive feature set without locking them into a closed, one-size-fits-all solution," said Felix Roeken, general manager at Trinigy.

Trinigy and Jenkins' collaboration will see RakNet's networking features integrated into Vision Engine's WYSIWYG scene editor, vForge. The inclusion of RakNet's SDK allows developers to modify the integration to meet specific needs.

RakNet
THE ENGINE



Three leading international MMO development studios have licensed Allegorithmic's Substance Redux texture compression tool, the French firm has announced.

Runewaker Entertainment, NetDragon and Wargaming.net are the three firms which will use Substance Redux to condense texture sizes in its upcoming games.

"Reducing the download size of MMO games really is an excellent way to cut down the bandwidth cost and lower the entrance barriers in homes and cyber cafes around the world," said Allegorithmic CEO Sebastien Deguy.

"We are thrilled that Runewaker, Netdragon and Wargaming.net have been able to produce such excellent results with Substance Redux and look forward to its continued success with users throughout the world."



allegorithmic

Middleware firm **Havok** will soon see its Behaviour Tool hit new levels of prominence – the company having put together a key tech deal with Bethesda.

The Behaviour Tool will be used in Bethesda's next landmark RPG title in its ongoing and massively popular *Elder Scrolls* series, *The Elder Scrolls V: Skyrim*.

The new Behaviour Tool allows users to build and simulate game-ready characters within a 3D level, placing the creation process directly within the hands of the artists and designers.

The authored content can then be used in games that also make use Havok's Physics, Animation or Behaviour middleware.

It joins the Havok Content Tools, also available from Havok's website, in helping prepare content from applications such as 3D Studio Max, Maya and XSI and see it in a real dynamic environment where character mechanics can be prototyped.

The Elder Scrolls V: Skyrim is being built using an entirely new game engine created by Bethesda.



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SERVICES NEWS

This month: Verticle Slice, Sega, Vicon and Xloc

Brighton usability testing lab **Vertical Slice** is to offer its services free to any developer or publisher that 'believes they deserves it most'.

The competition, open to any company from any country with some kind of permanent staff in the UK, will grant its winner services worth thousands of pounds, which include usability testing, UX playtesting, review prediction and more.

Entrants can also be at any stage in the development of their game, and will be free to customise the services included in the prize.

According to Vertical Slice, the services that are available to the winning company include playtesting, thorough behavioural analysis of gameplay, biometric data and analysis, player interviews and focus groups and discussion sessions.

To enter, developers and publishers must pen a paragraph on why 'usability testing is important in the future of the games industry' and send it to Vertical Slice.

www.verticleslice.co.uk



US-based localisation solutions firm **Xloc** is now offering an enhanced audio and asset merger process API in its Xloc 4.0 package.

The features allow users to add audio files and images to strings in Xloc, which can be played in the Xloc interface. Translators then upload translated versions of the assets for individual languages.

"We are excited to provide our customers with the ability to seamlessly integrate their audio files, images and text files within Xloc, and keep our clients' feedback in mind as we continually build upon the technology," said president and co-founder of Xloc Stephanie Deming.

"This addition allows Xloc users to incorporate all of their game files in one central location and realise the benefit of having full visibility into the current state of their localisations, streamlining the process and resulting in a faster time to market."

www.xloc.com



Sega Studios Australia has signed up with Vicon to use its mocap tech in an upcoming unannounced project.

The firm said it used a 10 camera Vicon system for eight straight hours "to capture performances in an outdoor setting".

Sega Studios Australia, formerly known as The Creative Assembly Oz, is said to have the largest motion capture facility in Australia, but opted for the Vicon system to record multiple performers simultaneously in an eight meters by eight meters area.

"Being able to capture data outside will add a new level of realism to the game," said Kendra Fairbairn McCarthy, head of motion capture at Sega Studios Australia.

"Sega's Australian studio are working on their own project of which we are wholly independent," said studio communications manager Keiran Brigden.

Alex Muir, Asia Pacific sales manager at Vicon, shed more light on the project:

"Today's game player expects every nuance to look perfect. Sega knew they had to shoot their motion capture outside to make the game play realistic. With all of the sunlight, wind and natural elements, this would have been a daunting thought previously, however with the Vicon T-Series, Sega was able to capture and deliver the motion needed".

www.sega.com



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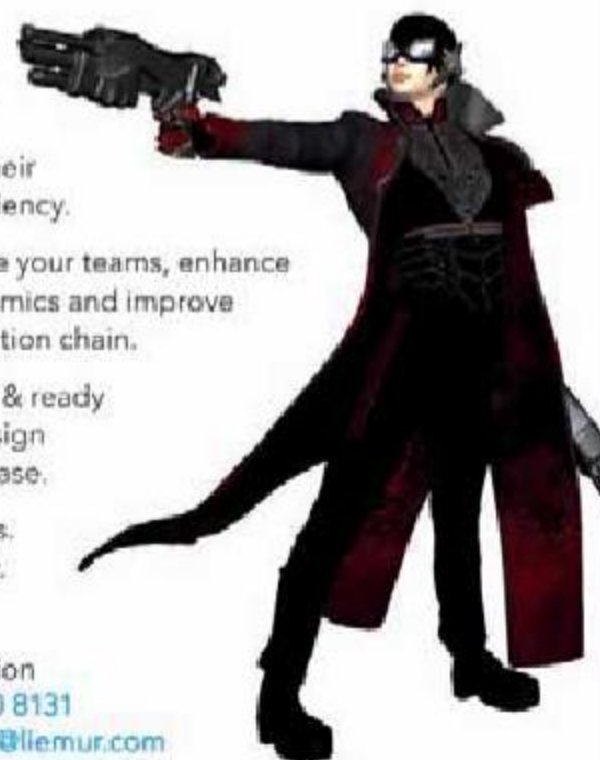


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TRAINING NEWS

This month: Dare to be Digital, 30 Under 30, Birmingham City University

The annual **Dare to be Digital** student development competition from Abertay University has opened for 2011 entries.

Offering the chance to compete for huge industry recognition and a BAFTA 'Ones to Watch' award, successful applicants will also get advice from industry mentors and have their work showcased at the Dare ProtoPlay games festival in August.

"Like the hugely exciting games industry, Dare to be Digital has stepped up to meet the fast-moving changes in the industry," said Dare project manager Elaine Russell.

"This year we're looking for exceptional creative game development talent, as well as strong commercial ideas about how the games developed at Abertay University can be taken to market after the competition.

"Games development is changing at a break-neck pace, with digital distribution channels making self-publishing a serious opportunity for very small teams. As well as the market for mobile phone gaming, there are also tablets, netbooks, handhelds and online distribution channels for PCs and consoles."

Deadline for entries this year falls on April 3rd. A panel of industry experts will judge who will be the successful entrants.

"I encourage applicants to think creatively and commercially. Dare to be Digital gives students a crash-course in team-working and access to advice from leading developers. We're expecting a large number of applications again," Russell concluded.
www.daretobedigital.com

An aspiring undergraduate games developer was so surprised at having featured in this year's *Develop* 30 Under 30 list of rising industry stars that he put out a press release. And yep, we're running it.

University of Portsmouth undergraduate Orcun Adsoy, 22, was named in *Develop*'s annual list "for his diversity of talent and milestones already passed at his young age."



Adsoy set up Distinction Games while completing his Computer Games Technology BSc at the University of Portsmouth.

He said he was "amazed to find I had made it on the list as some of the other people featured are working for big names in the industry or are already big names."

Adsoy, also the CEO for Distinction Games, has worked on projects for companies like Blitz and Red Redemption – still while on his final year at University.

www.distinctiongames.co.uk

Birmingham City University is to run several Gamer Camp 'finishing school' courses at its NTI Birmingham city-centre development facility.

The three courses, called Nano, Mini and Pro, are full-time commitments for accepted development students looking secure a job as artists or programmers in the games industry. They are overseen by course mentor Guy Wilday, formerly head of studio at Codemasters.

Course students are set a brief and mentored by representatives of studios like Blitz, Codemasters, FreeStyleGames and Rare. Those games will then be published via online platforms at a later date.

Gamer Camp Nano runs for 1 month from the July 4th to the 29th, costs £499 and has places for 8 programmers and 4 artists to create a smartphone game.

Gamer Camp Mini lasts for 3 months from the June 20th to August 22nd, costs £1,499 and will see students developing a game for the PSPgo.

Gamer Camp Pro students will be awarded with an MA in video games development from Birmingham City University for completing the nine month course, starting in September 2011. It will cost £8,000 for EU students and £10,050 for non-EU students, with students creating a PS3 title using PlayStation Move technology.

Payments are made upon acceptance to a course, subject to interview.
www.bcu.ac.uk



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"The course is rigorous and demanding, but in the end worth the hard work. I got two job offers from leading companies in the games industry within a month of completing my course. The best part is that I didn't really have to struggle to get them." Hussain Sheikh 2006 MSc

For more quotes from ex-students, examples of student work and syllabus information please visit www.msccgames.com. PhD and BSc study also available.

Image courtesy of Codemasters. All rights reserved.



THE UNIVERSITY OF HULL

CODA

A sideways look at the games industry...

THE INDUSTRY IN 140 CHARACTERS

A month in Tweets by the games elite

twitter



@martinhollis

I'm brushing up my coding after 12 years of not doing any. Fun. No really, it is.
(Martin Hollis, Zoonami)
Monday, January 17th



@megganpez

I have multiple countdown timers working in my head. So many things to look forward to.. (although the ticking sound might drive me crazy)
(Meggan Scavio, GDC event director)
Thursday, January 27th



@notch

The guy delivering our mail asked for my autograph. Neat!
(Markus Persson, Mojang Specifications)
Monday, January 17th



@MarkRein

Checking out the published NGP introduction videos. Wow, I really, really want one of these! Can't wait!
(Mark Rein, Epic Games)
Sunday, January 30th



@grumpygamer

Hey EA and Activision, how'bout taking that money your spending on lawyers and... you know... funding cool games instead.
(Ron Gilbert, game designer)
Thursday, January 20th



@therealcliffyb

If EA doesn't get me more green tea I'm going to trash this fucking press junket by tossing chairs off the balcony into the street below.
(Cliff Bleszinski, Epic Games)
Tuesday, February 1st



@MrPhilHarrison

#8bitfunding is a very interesting idea for crowdsource funding of games <http://j.mp/eXbThf>
(Phil Harrison, London Venture Partners)
Tuesday, January 25th



@ranarama

Am a bit gobsmacked at this Develop thing - amazing to share a cover with so many of my heroes. <http://plixi.com/p/74300889>
(Margaret Robertson, Hide&Seek)
Wednesday, February 2nd



@HIDEO_KOJIMA_EN

Every creator was delighted to NGP's surpassing holding and operational feeling.
(Hideo Kojima, Kojima Productions)
Thursday, January 27th



@thezombiecow

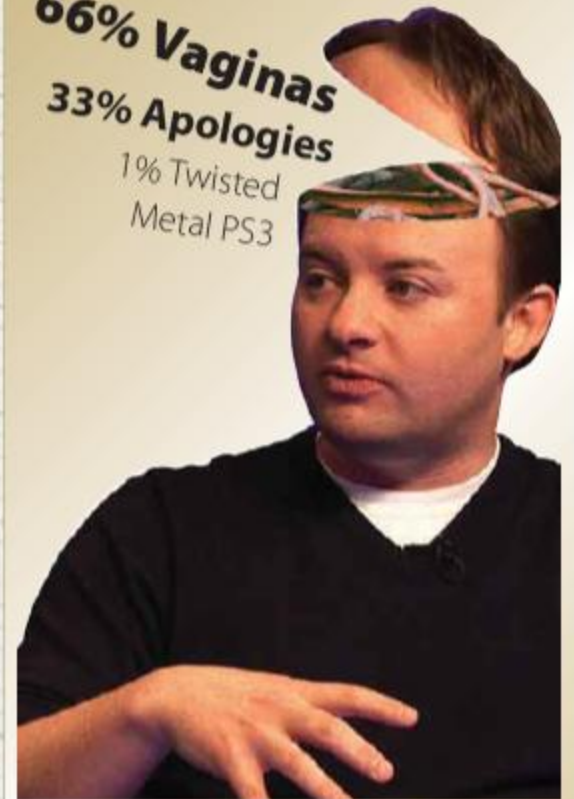
Sonic gets a bad rep for his supporting cast, but as far as I can tell everyone in Super Mario Galaxy 2 is a blubbering, over-jolly prick.
(Dan Marshall, Zombie Cow)
Thursday, February 3rd

AN OPEN MIND

David Jaffe

Based on his Tweets

66% Vaginas
33% Apologies
1% Twisted Metal PS3



ON THE UNVEILING OF THE NGP: "New hardware is like new pussy. It's exciting at first but after you've experienced enough fresh vagina over the years - while there's still always a bit of excitement when something new comes along - you learn that sooner than later, the new and exciting becomes the standard and dependable and so it's best to just stay focused and [grateful] on what you've got at the moment and if you need to make a change, it'll just happen organically."
ON HIS GENITAL GAG: "It was brought to my attention today that perhaps my NGP comment potentially offended members of the *Twisted Metal* team. As I said earlier, the moment that happens, it no longer makes sense to be tasteless and vulgar just for the fun of it."

IT FIGURES: Global Game Jam



THE **THIRD** annual Global Game Jam welcomed over **6,585** participants this year; many more than the **5,000** expected. In just **48** hours developers from an impressive **44** countries made games in some **169** locations, all working on the theme of 'extinction'. Most remarkably, **one** game was made for every **4.3** contributors, meaning **1,500** titles were created in the **two** days. Of the nations involved, Norway boasted the most Game Jam members, with **227** developers contributing.
www.globalgamejam.org

REWIND

A year in video games: 1998

A look back at a time when things were a great deal simpler for those of us making video games

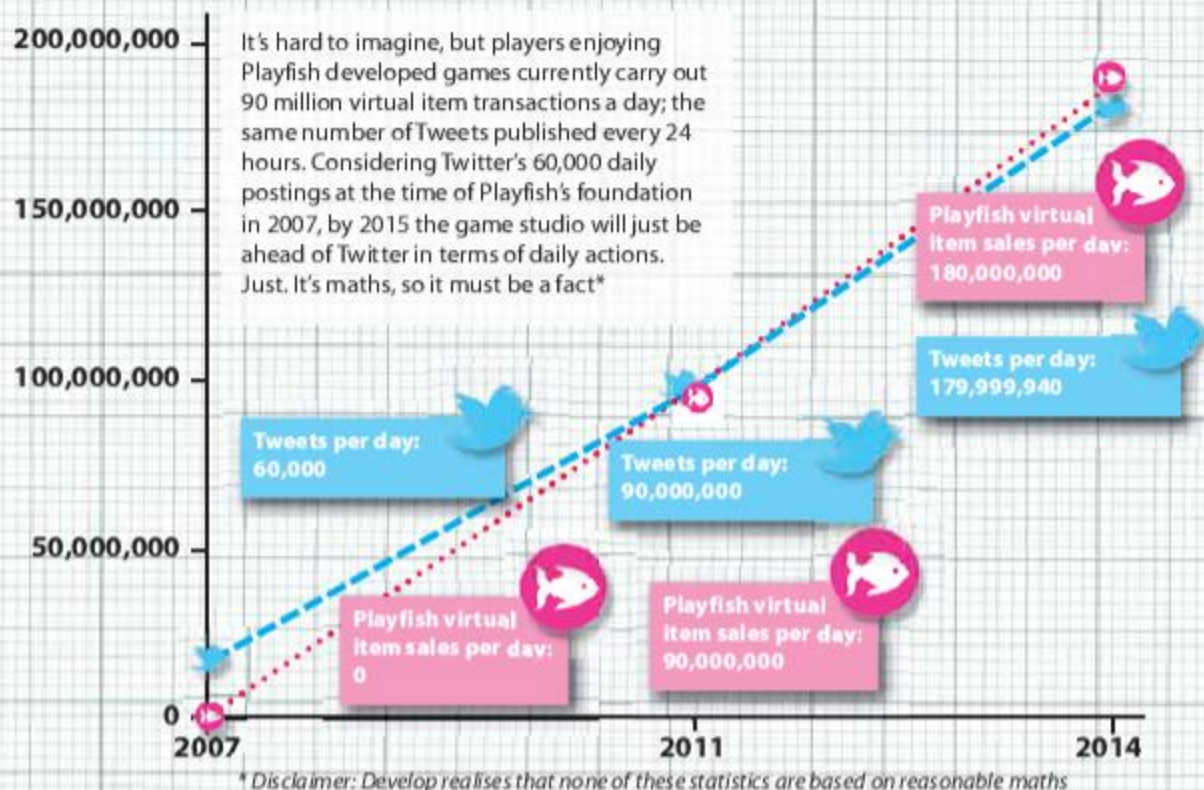


The first ever GDC is held in a living room

Wrong Numbers

Stats can be misleading. Forward-project the trends from the dawn of 2011 and the results show a misguided vision of the future

This month: Playfish vs. Twitter



DEVIPEDIA

Dissecting the hyperbole of games development

Super Oval Design

su·per o·val de·sign proper noun

What 'they' think it means:

Sony's Next Generation Portable (AKA the PSP2) takes on a shape described by its creators as the Super Oval Design. You may not know it, but Super Oval Design is both 'a form factor' and 'a design philosophy'. The very words encapsulate both the heritage of the first PSP, and Sony's ambitious drive into the future. The discovery of Super Oval Design has given birth to a new kind of handheld; a device that will – prepare yourselves for

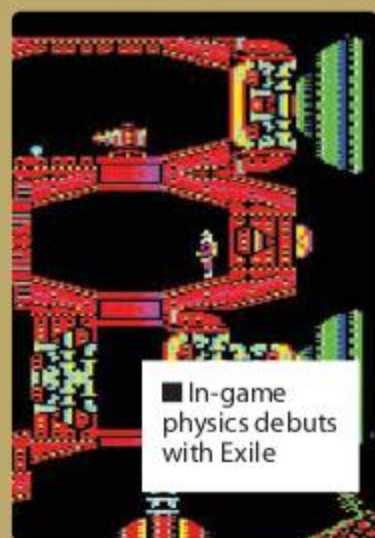
this – 'sit comfortably in the user's hands'. It's a revolution in ergonomic reality. It lets you know the NGP is many things. Firstly it is Super. And more than being just Super it is also a shape. That shape is Oval. A very special Oval that has been designed. A Super Oval Design.

What it really means:

The NGP's shape is quite a bit like the PSP's shape, but it's got slightly more curved edges.



■ The Sega Megadrive is released in Japan



■ In-game physics debuts with Exile

■ Coleco closes shop



ACTIVISION®

■ Activision is renamed (briefly) to Mediagenic

develop

FORWARD PLANNER

April 2011

Mocap & Facial Animation

Every facet of character animation examined, from limb animation to lip-synching.

Regional Focus: Oxford

We examine the studios and technology companies in this key UK cluster.

May 2011

With *Develop 100* Insertion

Audio

A fresh look at the music and audio for the games sector, including in-house teams through to outsourcers.

Regional Focus: Nordic

We look at games development across Scandinavia (Norway, Sweden, Denmark), Iceland and Finland

June 2011

Middleware

Trends and new releases in third party tech, tools and engines.

Regional Focus: Scotland

Studios from start-ups to commercial powerhouses profiled.

Event:

E3 – June 7th to June 9th

July 2011

Regional Focus: Guildford

One of UK games dev's many famed clusters goes under the Develop microscope

Events:

Develop Conference – July 19th to July 21st

August 2011

Visual Arts/CG/Game Graphics

New techniques and tech for cutting edge in-game visuals

Regional Focus: Germany

A profile of the German games sector to accompany GDC Europe/Gamescom

Event:

GDC Europe/Gamescom – August 17th to August 21st

September 2011

Artificial Intelligence

The new tricks and tools developers are using to make characters think

MMOs/Online Technology

A round-up of all the new trends and technologies in connected games

Regional Focus: Northern England East & West

What's new in key hubs including Liverpool, Leeds, Sheffield and Newcastle

Event:

GDC Online – October 10th to October 13th

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THE FAQ PAGE: CHARLES CECIL

Develop grills a respected figure from the global development sector...



Above: Charles Cecil is currently busy working on an original Revolution title

Who are you and what do you do?

I'm Charles Cecil. I am managing director of Revolution Software where I write and design narrative-driven games, which recently we have started to publish directly. I also work with license holders on how best to translate their properties to games.

What are you working on right now?

Just before Christmas we completed and published the iOS versions of *Broken Sword – The Smoking Mirror: Remastered*, and I worked with Sumo to complete the fourth *Doctor Who Adventure Game* which was released on Christmas Eve. Right now I am working on an original Revolution adventure.

What was the first video game or product you worked on in the industry?

The first video game that I wrote was *Adventure B: Inca Curse* on the Sinclair ZX81. I was in my first year at university reading Mechanical Engineering and I was rapidly coming to the conclusion that engineering wasn't my dream vocation. A fellow student had just disassembled the ZX80 ROM and published the results. Over a pint he suggested that if I were to design and write a text adventure then he could code it. Seemed like a good idea at the time.

“My work is a jealous mistress. With children that love games, and my wife who works with me, family life and work life are intertwined.”

Charles Cecil, Revolution

What was the first video game you ever played? Did you enjoy it?

I'm afraid that, like most of us who were lucky enough/are old enough to have been around to experience the birth of our industry, my first video game was table top *Space Invaders*. Shortly after that I got hold of a Radio Shack TRS-80 and loved many of their games including Scott Adams's adventures.

What is your favourite game ever, and for what reason?

I really love the casual games coming out on iOS – there are just so many great titles from *Angry Birds* and *Cut the Rope*, through *Game Dev Story* and the range of adventures. But the game that still gives me a twinge of excitement whenever it is mentioned is *R-Type* – visually stunning, extraordinary

game mechanics, perfectly balanced. One of the few arcade games that I really was good at, it was, and remains, truly brilliant.

What do you enjoy about the video games industry today?

I really loved the industry in the early '80s when everything was so fresh and exciting. One person could design, code, create graphics and compose music for their masterpiece, and back then innovation really drove everything.

That changed radically in the '90s but has now returned – once again, games development is about having a strong vision, and innovating in the creation of, as well as the publishing of games.

Small, creative teams of talented individuals can come together and not only create extraordinary games, but get them to market. Long may it last.

What disappoints you about the video games industry today?

As a continuation of the answer above, the dev scene in the few years that spanned either side of the millennium were profoundly depressing. In the midst of the hardware cycle trough, and with limited retail space, and escalating dev costs, decisions came to be driven by balance sheets rather than passion. The wrong people drove the industry in the wrong directions. Digital distribution has changed everyone's mindset and freed all aspects of the industry.

What hobbies, collections or interests do you have that are completely unrelated to video games?

My work is a jealous mistress. With children that love games, and my wife who works with me, family life and work life are wholly intertwined. Holidays involve going to exotic places that could feature in a game. I love history and physics-based science. I row and enjoy competing in regattas and attempt to play various other sports – football and tennis. I just wish that I had the time to play more games.



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